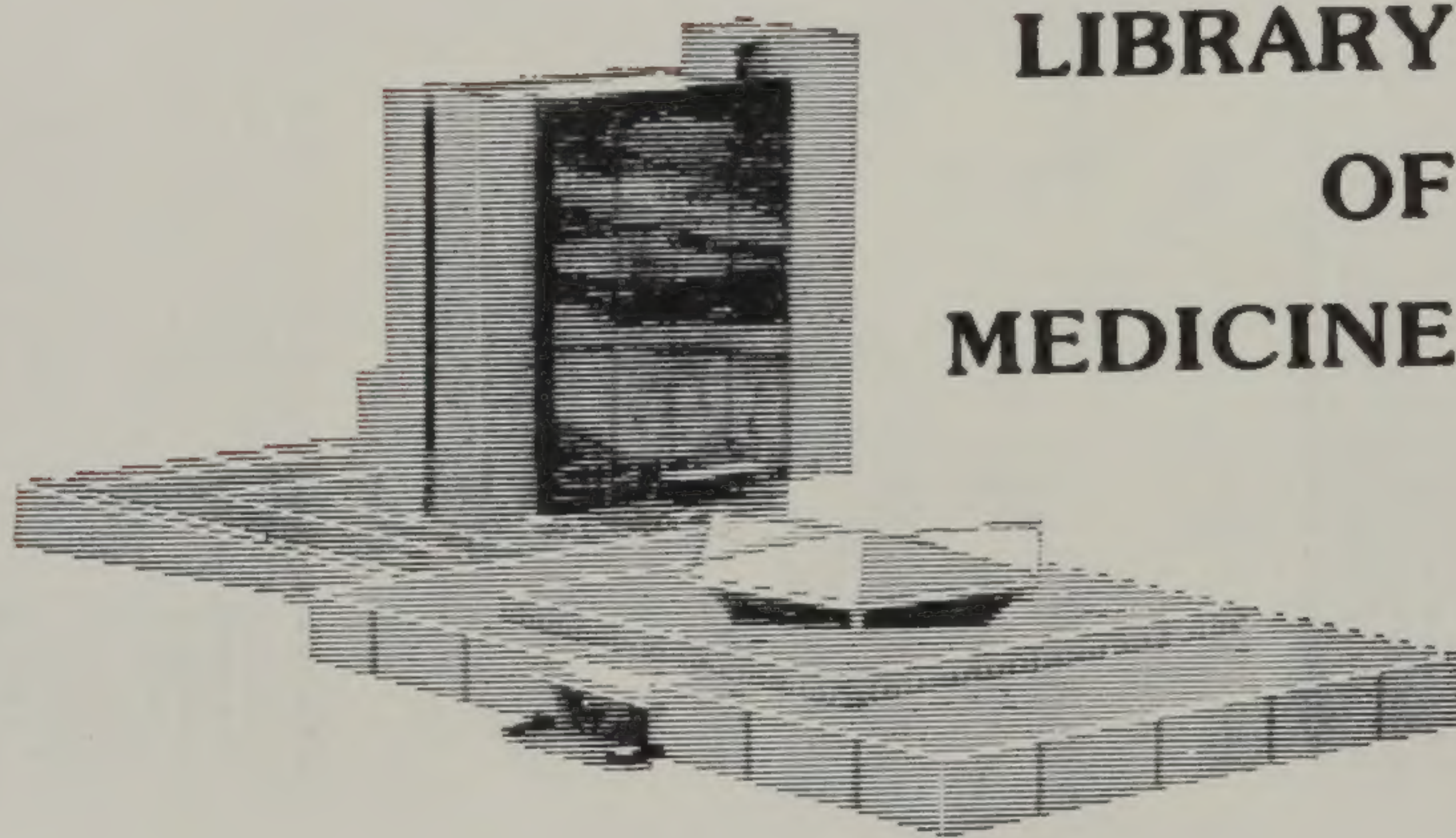


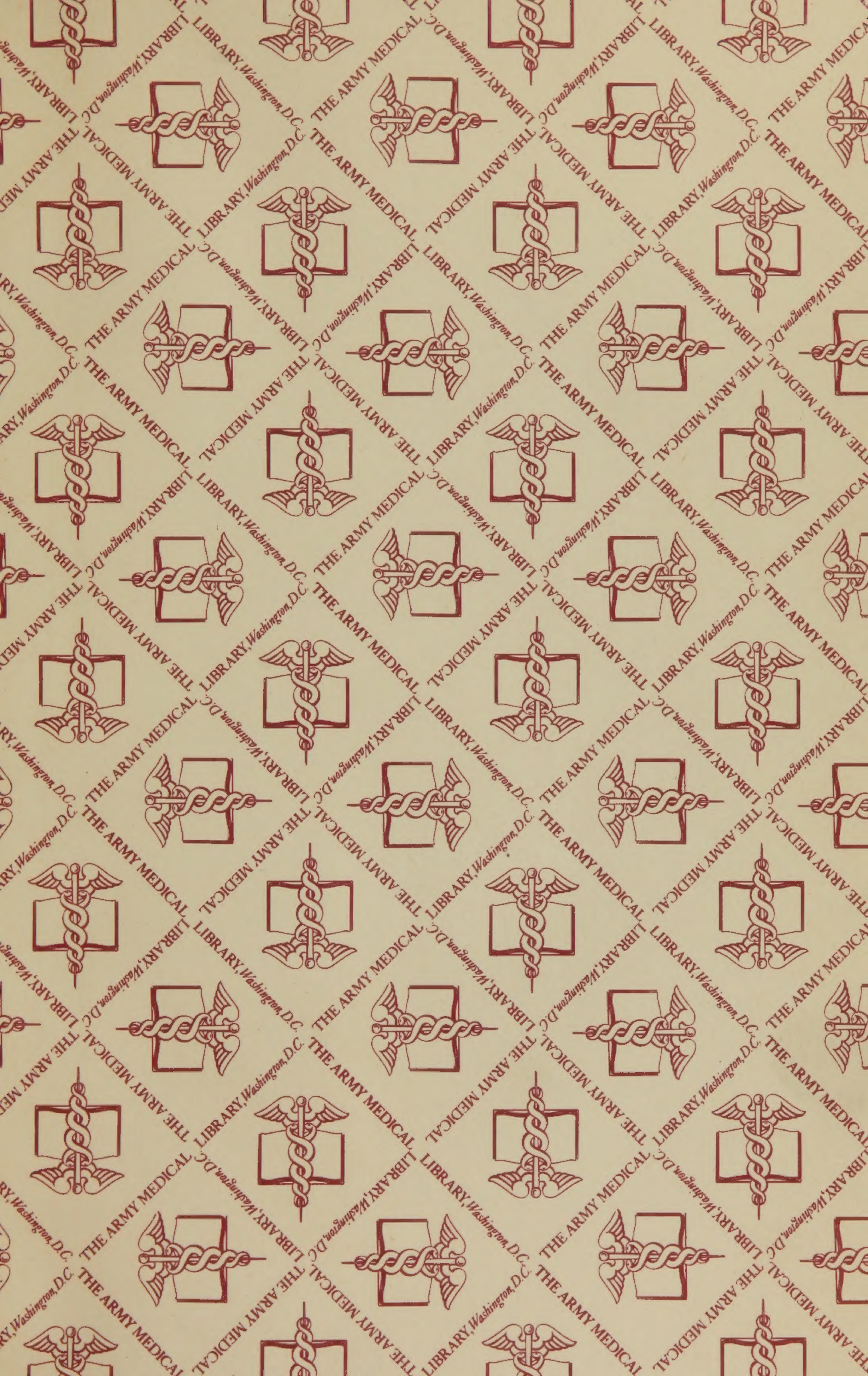
NATIONAL LIBRARY OF MEDICINE



NLM 00580126 0

**U.S. NATIONAL
LIBRARY
OF
MEDICINE**





BILIARY CALCULI;

PERINEORRHAPHY;

HOSPITAL GANGRENE,

AND ITS KINDRED DISEASES;

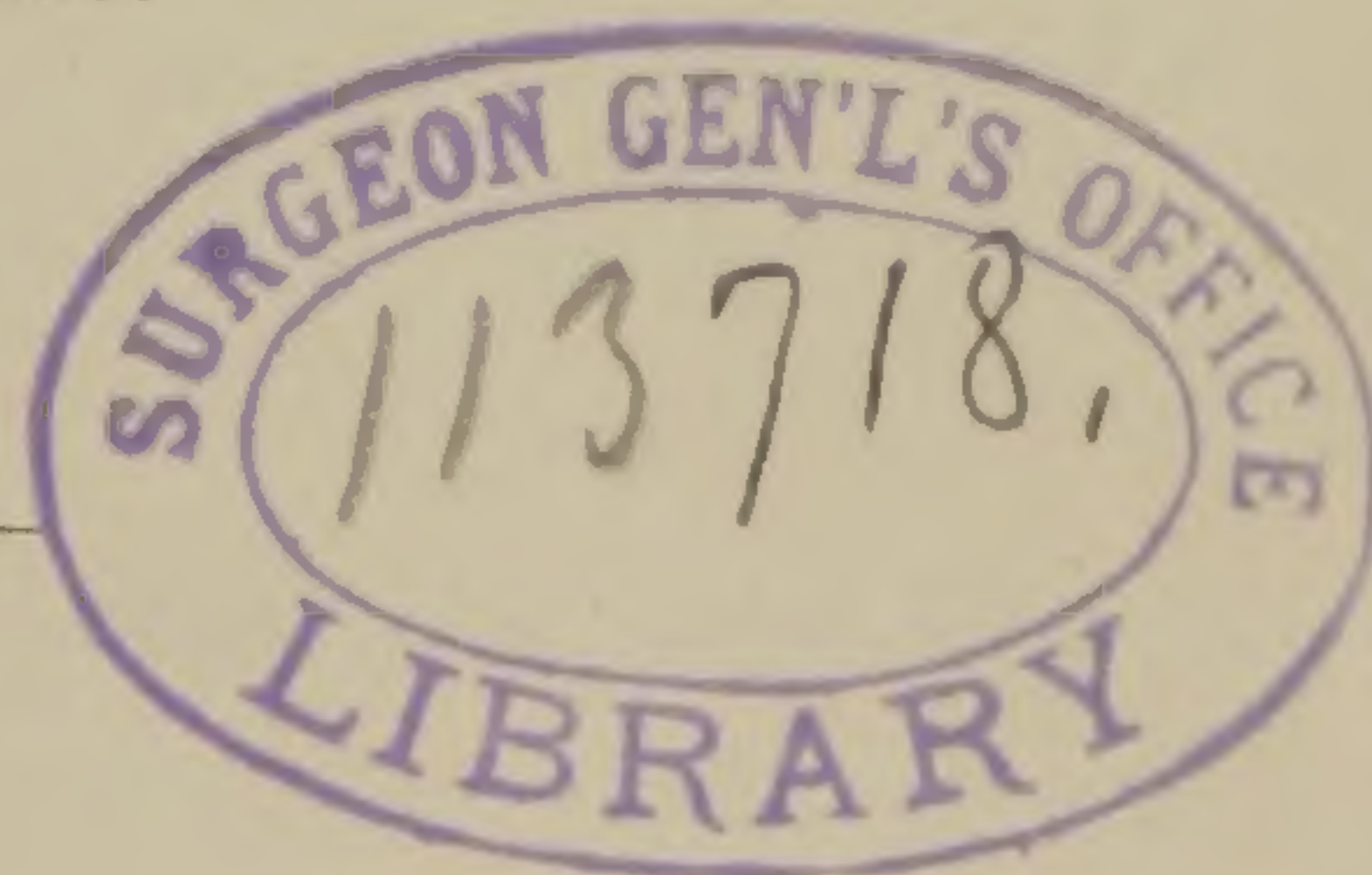
WITH THEIR

RESPECTIVE TREATMENTS.

BY

C. H. VON TAGEN, M.D.,

LATE PROFESSOR OF OPERATIVE SURGERY, HOMŒOPATHIC HOSPITAL COLLEGE,
CLEVELAND, OHIO, AND HAHNEMANN MEDICAL COLLEGE,
CHICAGO, ILL., ETC., ETC., ETC.



BOERICKE & TAFEL,

NEW YORK :
145 GRAND STREET.

PHILADELPHIA :
635 ARCH STREET.

1881.

WP

T1256

1881

Copyright, Boericke & Tafel, 1881.



PREFACE.

THE author tenders to his professional brethren the contents of this little volume, his first contribution in *book form*, trusting that it may prove worthy of their recognition, as a work of reference, in the treatment of the various surgical subjects, herein contained. It has been his earnest effort to be *concise* and *brief*; and yet to make the work as *thoroughly practical* as the busy practitioner and surgeon, in his daily routine, could desire.

He would especially call attention to the treatment of HOSPITAL GANGRENE by Bromine. The reader will notice that there is appended to this treatise a tabulated statement of some 1100 cases, many of them complicated with other grave diseases, showing the *smallest percentage of loss on record*. It was only after persevering efforts, long maintained, and by thoroughly testing the many and various remedies recommended by the profession at large, for the arresting and curing of hospital maladies like these, that the author was enabled finally to light upon this remedy; from the skillful use of which were obtained the results noted.

In conclusion, the author respectfully requests, at the hands of the professional reader, a fair and just criticism of his efforts; and a *thorough* and *complete* test of the treatment, just referred to, when the opportunity offers.

C. H. v. T.

AS A TRIBUTE

OF HIGH APPRECIATION AND MARKED ESTEEM, THIS, MY FIRST VOLUME, I MOST
RESPECTFULLY DEDICATE TO MY DEAR FRIEND AND FIRST PROFESSORIAL INSTRUCTOR IN THE SCIENCE OF HOMŒOPATHY, NEARLY
A QUARTER OF A CENTURY AGO, AND NOW PRESIDENT AND PROFESSOR OF THEORY AND PRACTICE IN HAHNEMANN MEDICAL COLLEGE OF CHICAGO, ILL.,
PROF. A. E. SMALL, M.D.,
WHO MAY BE JUSTLY PRONOUNCED THE "NESTOR" OF
HOMŒOPATHY IN THE GREAT WEST.

THE AUTHOR.

INTRODUCTION.

THERE is little for us to offer, by way of extenuation, for bringing before the medical profession a volume of this kind, except the fact that all of the subjects selected are well known to be of a formidable class of diseases that are but partially and imperfectly understood, even by physicians of years experience; as the failures as well as mortalities that have occurred will attest.

These special diseases come more appropriately within the province of the surgeon; and yet most, in fact all of the works on surgery, of the present day, are deficient in information with regard to the ailments and accidents, which give rise to the conditions herein noted.

Nor is the needed instruction to be found in any of the medical works in general. Our intention and purpose then, is to present a concise but comprehensive and practical description of these diseases, with surgical and medical treatment, embracing all that is new up to the present date; thus meeting a demand which no doubt exists.

BILIARY CALCULI:

EMBRACING THE

HISTOLOGY, ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE LIVER,

WITH

HISTORICAL CASES AND TREATMENT.

[Read before the Chicago Homœopathic College of Physicians and Surgeons, June, 1878.]

BILIARY CALCULI.

With a view to the proper comprehension of this subject, assigned the writer at the last monthly meeting of this honorable body, it is deemed an essential feature to preface our remarks with some of the histological and physiological features, etc., of such portions of the hepatic structures, embraced in the term biliary or bile-secreting.

Another reason for presenting these remarks, is to lay before the members of this society, for their earnest consideration (and especially for the benefit of any who may not have rendered themselves familiar with them), some of the researches and observations recently advanced by modern investigators and authors. It may be said of the liver, that it is unlike any other gland, elaborating its secretion not out of arterial blood, but from the venous blood of the vena porta. It possesses a very richly developed capillary net-work, into which the vena porta pours its contents; and thus not only constitutes the starting point of the hepatic vein, but likewise receives the blood from the hepatic artery, after it has flowed through a peculiar and intricate system of capillaries destined for the nutrition of vessels, gall-ducts and nerves. The secreting cells of the liver are arranged in such a manner as to bring them into a much more intimate and extensive relationship and contact with the capillaries, than is the case in other glands. Moreover, the number of the canals into which these cells pour their secretions, is much greater than in any other gland, in proportion to the number of cells composing its structure.

We will now consider the arrangement of the *hepatic ducts* and *bile ducts*, in the lobules of the liver.

The *hepatic duct* enters the liver in company with the hepatic artery and portal vein, at its transverse fissure, and passes with these vessels to the lobules.

In its course it gives off a great many arborescent or divergent branches; the larger of which anastomose frequently with each other; the smaller ones remain solitary, and thus continue on to the surfaces of the lobules.

From these minute peri-lobular ramifications arise a set of capillary tubes, which enter the substance of the lobules superficially, and there terminate in blind extremities; being lined within by a simple epithelial layer made up of the smaller or hepatic cells. If the scrapings from the incised surface of a fresh liver be placed under a moderately high power of the microscope, the field of vision will be found covered with numerous round, ovoid, or irregularly polygonal cells, from $\frac{1}{1500}$ to $\frac{1}{1000}$ of an inch in diameter. In their normal condition they are more frequently ovoid than otherwise. When polygonal in form, their corners are always rounded. These cells present sometimes with two, again with one, and also without nucleoli; and the presence of numerous small pigmentary granules imparts to the cells a peculiar and characteristic appearance. In addition, nearly all of them contain a few granules or minute fat globules. At times the pigmentary and fatty matter is so abundant as to render the nuclei obscure. The addition of Acetic Acid, however, will cause a paleness of the cells, and thus make them more distinct. By appropriate agents, animal starch (glycogenic matter) may be demonstrated in the substance of these cells.

Cells taken from a hardened liver appear as polyhedra, or many-sided cells, possessing variable shapes, sometimes presenting peaked angles; and when seen in profile, their edges and their surfaces appear at one time sharply and darkly outlined; at another, irregular, indistinct and ragged, as if torn. The cell body is darkly granulated; the nucleus has a sharp outline, which is often double. So long as these cells remain *in situ*, they appear to be separated and even isolated from each

other. Again, there is often seen a fissure, which is an indication of commencing, or incipient dissolution. At times, the cells are intimately united with the walls of the capillaries, though usually the two are found separated by an intervening space.

Besides the forms already described, hepatic cells are often found of varied shapes and calibre. One variety presents a scale-like appearance, and these are piled up on the capillaries like spindles, and vary in length. All except those first described may be regarded as anomalous conditions, and may be accounted for, in a measure, from the fact that the living liver-cell consists of a semi-fluid mass, which can be made artificially to assume a great variety of shapes, which it will retain after it becomes stiff, or has been hardened.

The large hepatic cells are usually connected with each other in pairs; these fill up the meshes or interspaces of the capillary plexus of the lobule; and in their aggregate mass constitute an epithelial net-work, which is found interwoven thus with the web of capillary vessels.

Late researches have shown, pretty conclusively, that the following is probably the true relation of the ultimate ramifications of the bile ducts, in the lobules, to the hepatic cells.

THE BILIARY DUCTS, which possess a diameter of about $\frac{1}{80}$ of a line, according to Kölliker, are lined with pavement epithelium, which is replaced by a cylindrical epithelium. The *hepatic ducts* proper and *cystic duct*, also the *ductus communis choledochus* present muscular fibres in their walls and also a considerable number of racemose or grape-like clusters of glands. The hepatic artery accompanies the biliary ducts to the lobules and supplies them with numerous branches, and finally terminates in the fine capillary plexus of the portal vein.

The biliary ducts, and hepatic capillaries, thus constitute a tubular gland. The liver then is made up of two sets of glands, which are intimately intermingled with each other. One of these, a blood gland, is concerned in the secretion of sugar, and the other, a tubular gland, is engaged in the secretion of bile. No less an authority than the world-renowned and recently deceased M. Claude Bernard established this circumstance,

and makes mention of it in his *Physiology of the Liver*, as well as in his work on *Comparative Anatomy*. The mode of origin, of the radicles of the hepatic duct, has been the subject of close and varied researches. The number of theories, which have been advanced in explanation of this point, are evidence of the uncertainty which formerly surrounded the subject.

We have admitted that the liver is made up of two distinct forms of gland structure, and have also described the radicules vasculaires of the hepatic ducts as tubes terminating in blind termini or ends; which fact we have witnessed in syphilitic and cirrhotic livers. These latter observations were also noted by Professor Kuss, of Strassburg, Germany, and by Professor C. Morel, of France. In the substance of the lobules is found an exceedingly fine and regular net-work of vessels of uniform size, about the $\frac{1}{10000}$ of an inch in diameter, which surround the hepatic or liver cells, each separate cell lying in a space bounded by inosculating branches of these canals. This plexus is entirely independent of the blood-vessels, which seems to embrace in its meshes each individual cell, extending from the periphery of the lobule, (where it is in communication with the inter-lobular bile ducts,) to the intra-lobular vein in the centre. These vessels have exceedingly thin and homogeneous walls,—the existence of which have not yet been practically demonstrated, and are devoid of epithelial lining; being much smaller than any epithelial cells ever yet discovered, or of which we have any knowledge; and it may also be added that this arrangement has no *analogue* in any other of the secreting organs.

It is only within a few years past, that the reticulated or net-like bile ducts of the lobules of the liver have attracted much attention; they were discovered by Gerlach in 1848, in the substance of the lobules, near the periphery.

It is stated, however, at an earlier period, viz., in 1843, that Kiernan first described and figured this “biliary plexus” in a paper entitled the *Anatomy and Physiology of the Liver*; which appeared in the *Philosophical Transactions*, London, 1843, part 1st, page 741 and plate 23, figure 3. His figure is diagrammatic, and not taken from nature; and has appeared in many of the works on descriptive anatomy of the present time.

In 1853, M. Lareboullet published a prize essay, in Paris, *on the Minute Structure of the Liver*; in which he corroborates Kiernan's theory and concludes that the biliary plexus is demonstrable; although after long and laborious research, he was not able to demonstrate the existence of the membrane forming the walls of the tubes composing it.

In a monograph by Lionel S. Beale, *On Some Points in the Anatomy of the Liver of Man and Vertebrate Animals*, London, 1856, the following is the summary of his able and interesting investigations on this subject. He states: "The liver-cells lie within a tubular net-work of basement membrane, which separates them from the walls of the capillaries. In many cases, however, these thin membranous tubes cannot be separated, and are, no doubt, incorporated with each other. The cell-containing net-work is directly continuous with the most minute ducts, which ramify at the circumference of the lobule, and it terminates in the centre by loops, which lie close to the intra-lobular vein."

It appears that both Lareboullet and Beale describe the tubes composing the "cell-containing net-work," as larger in diameter than the "minute ducts," which are the radicles of the hepatic duct. "The tubes of these cells are about $\frac{1}{1000}$ of an inch in diameter, the finest of them not more than $\frac{1}{3000}$, and even less". "The finest ducts are lined with a very delicate layer of epithelium; composed of *flattened cells* of a circular form; contrasting remarkably with large secreting cells"—the hepatic cells proper, which occupy the cell-containing net-work, or biliary plexus.—Beale, page 74.

THE BILIARY DUCTS are the hepatic, the cystic, and the ductus communis choledochus. The last named, the largest of the series, is the common excretory duct of both liver and gall-bladder. Its length is about three inches, and its calibre that of an ordinary goose-quill, and is formed by the junction of the cystic and hepatic ducts. In its course to the duodenum it joins the pancreatic duct near its termination; then passes with it obliquely between the muscular coats; the two opening by a common orifice, a little below the middle, and on the in-

ner side, of the descending portion of the duodenum, upon the summit of a papillary prominence.

THE HEPATIC DUCT is composed of two trunks, of nearly equal size; which proceed from the liver at the transverse fissure, one from either side. These unite and pass downwards, and toward the right side, for an inch and a half; and there at an acute angle join the cystic duct, to form the common duct of the liver. Its calibre is about one-third less than the ductus communis choledochus, or common bile duct.

THE CYSTIC DUCT, or duct of the gall-bladder, is about an inch in length. It passes obliquely downward, and to the left, from the neck of the gall-bladder, and joins the hepatic duct; the two combining to form the common duct. In calibre it is about one-third the size of the first named duct. The mucous membrane, lining its interior, is thrown into a series of crescentic folds, some five to twelve in number, which project into the duct in regular succession, and run obliquely around the tube, presenting somewhat the appearance of a spiral valve. They are only found in the human species. When the duct has been distended, the interspaces between these folds are dilated, thus giving to its exterior surface a sacculated appearance. The coats of the biliary ducts are composed of an external, or fibrous, and an internal, or mucous layer. The fibrous, or outer layer, is composed of strong areolar fibrous tissue.

The mucous, or inner coat, is continuous with the lining membrane of the hepatic ducts and gall-bladder; also with that of the duodenum; is also liberally supplied with two sets of glands, which open by means of minute tubes, which have their termini either separately, in the hepatic duct, or into the ducts of the tubular glands.

THE GALL-BLADDER, or reservoir for the bile, is a conical or pear-shaped sac, lodged in a fossa on the concave or under surface of the liver,—right lobe. It is some four inches in length; one inch in breadth, at its widest portion. Its capacity is from eight to ten drachms.

The gall-bladder is held in situ by means of the peritoneum which, as a rule, passes over its under surface. In exceptional instances its entire surface is found invested with a peritoneal covering. It is then connected to the under surface of the liver by means of a kind of mesentery. It is divided into a body, fundus, and neck. When distended with bile, or when occupied with calculi, the fundus may ordinarily be felt through the abdominal parieties; except in plethoric subjects.

SYMPTOMATOLOGY.—Biliary calculi, as a rule, induce symptoms only when they are passing through one or more of the biliary ducts and toward the bowel; as long as they remain in the gall-bladder they produce no active symptoms, even though they be numerous and of considerable size. It is then during their egress, and especially when becoming lodged, that they create the most intense suffering. Instances are known, in which gall-stones, in vast numbers, have accumulated in the gall-bladders of persons, who during their life time have never been known to suffer pain about the liver, nor yet to evince symptoms of jaundice, nor any token denoting the presence of any such concretions. We may infer from this that while they remain quiescent in the gall-reservoir, they are comparatively harmless. When of small size and smooth, they may even pass through the cystic and common ducts, or remain lodged there for a time, and their presence be only declared upon examination after death; the patient having died of some other ailment.

Pain is induced when the ducts are put upon the stretch, causing a spasmodic action, followed by contraction; and according to the extent of this condition will be the severity of the pain. Usually it comes on suddenly in the epigastrium, and toward the right side, and can be generally located at a point corresponding with the orifice of the common duct, thence shooting to the back; occurring in paroxysms, although there is constant dull pain during the intermissions. When severe, the skin of the entire body becomes pale, pulse small and feeble;—nausea and vomiting, anxiety and restlessness, hurried respiration, faintness and marked prostration, are then

constant symptoms. Paroxysms of pain may occur thus several times in an hour, or may be much longer prolonged. Relief follows, as soon as the calculus passes into the bowel, unless it be of unusual and large proportions. Inflammation sometimes ensues, from prolonged irritation, caused by the presence of the calculus, and direct pressure or distending force; and again, from bilious accumulations which they may occasion. This condition may pass on to suppuration, and ulceration; and, through the medium of adhesions between the contiguous peritoneal surfaces, the discharge of the calculus may occur externally, through the parietes of the abdomen, or may drop into one of the internal cavities. Recoveries sometimes take place even under these circumstances. Occasionally a long-continued jaundiced condition pre-exists, which, taken in connection with the foregoing symptoms, indicate the presence of gall-stones.

Another condition, worthy of consideration, is the fact that a duct may be distended by a concretion of this nature, and even produce spasms of pain, irritation, inflammation, and ulceration, without a complete stoppage of the flow of bile; which may trace its way along the sides of the calculus. It is the absence of bile in the alimentary canal, the consequent derangement of digestion, etc., that induces the jaundiced condition and white stool;—the bile being absorbed, and carried into the general circulation.

Biliary calculi or gall-stones, occur more frequently in the gall-bladder; exceptionally in the larger and smaller gall-ducts. Their number, size, form and properties, change according to their constituents, and are often found single; not unfrequently they exist in large numbers.

PROPERTIES AND CONSTITUENTS OF GALL-STONE OR BILIARY CALCULI.—These are composed mostly of *cholesterin* and the coloring matter of the bile, which Wagner terms, *bilirubin*, also *carbonate* and *phosphate of lime*, *mucus*, *biliary acids* and *margarin*. Gall-stones form, sometimes, in consequence of an abnormally increased proportion of *cholesterin*, and biliary coloring matter, in the bile; these form precipitations, at times facilitated by

the presence of catarrh of the mucous membrane; their nuclei are rarely composed of a foreign body. According to Mattenheimer (*Archives of Anatomy, Physiology, etc.*, 1872, page 509), "Many gall-stones arise perhaps from inspissation (thickening) of the bile and chalky substances in the villi, sometimes occurring on the mucous membrane of the gall-bladder."

Usually, this variety of calculi may be distinguished as follows:

CALCULI OF CHOLESTERIN.—These may be single, or few; small, or of the size of a hen's egg; of a round or oval shape; smooth, or rough and granular, on their surfaces; of a whitish or yellowish-brown color, or black; rarely triangular; always presenting a crystalline striation of their surfaces, when fractured, or section is made.

CALCULI OF CHOLESTERIN AND BILIARY COLORING MATTER.—These are found with a small quantity of carbonate and phosphate of lime, varying in proportions, of these constituents; generally, brown or green, in color; varying likewise in proportions; usually numerous in point of numbers; in shape round or angular, most frequently the former, and then usually smooth, with chalky section, like the external surface, or variously colored in the different stria or layers.

At times BILIARY CALCULI, are composed alone of biliary coloring matter, of a brown or green color, their calibre small, not numerous, and in shape round or pointed. This variety is rare.

CALCULI OF CARBONATE of lime, *exclusively*, presenting a crystalline surface, when fractured. These are likewise not common.

Gall-stones, as a rule, are not of a hard consistence, and may sometimes be easily compressed and mashed up between the fingers.

Large gall-stones, with the exception of their centres or nuclei, consist almost entirely of *cholesterin*, and are, therefore, whitish and crystalline.

Small gall-stones, resembling grains of black pepper, and of

an irregular tuberculated form of almost black color, are occasionally met with; these consist almost entirely of pigment and earthy properties, such as the carbonate and phosphate of lime.

It is not an improbable theory that they form by the pigment granules becoming cemented—they coalesce—together by mucus, and then form a nucleus around which the cholesterin gathers and forms, and is thus deposited in layers. Sometimes the reverse of this occurs, as in two cases witnessed by the writer, in which the central formation, or nucleus, was composed of cholesterin, and the successive layers without were formed of the phosphate and carbonate of lime, etc. The largest of the two weighed $437\frac{1}{2}$ grains, the smaller 300 grains. Cases are on record in which the nuclei of biliary calculi were composed of a pin, a lumbricus, a portion of a distoma, etc. Calculi found in the ducts are usually cylindrical, occasionally aborescent or branched, or entirely amorphous or non-crystalized.

Numerous chemical analyses have been made; among the most prominent and satisfactory is that by Chevreul, although not of recent date. According to this authority, gall-stones are composed of the yellow coloring matter of the bile and cholesterin; the last named usually predominating, and forming in many instances the entire bulk of the concretion.

Prof. Thompson, a noted authority of the Glasgow University, states that all biliary concretions may be embraced in three species, the *cholesteric*, *mellitic*, and *inspissated* varieties. The first named is composed nearly, if not entirely, of *cholesterin*; is of a pearly white lustre, with a slight brown shade, spherical in form and of a crystallined laminated structure; is of low specific gravity, void of smell or taste, free from acid or alkali properties, insoluble in water, but partially soluble in boiling alcohol, fusing at a temperature of 279° .

The *mellitic* variety, pronounced by the author as by far the most common form, has been thus named by the Professor from its dark, honey-like color. In consistency it is soft, smooth, and always of a polygonal shape, being composed usually of two tetrahedrons, applied base to base, with their angles and edges

ovoid, or rounded. Externally, it is composed of thin, concentric layers, or lamina, of cholesterin; found lying over a nucleus of indurated bile, resembling very much granulated honey.

The *inspissated*, or third variety, as its title indicates, is composed wholly of inspissated bile. It presents a yellowish or dark saffron color, sometimes a cinnamon hue, of a semi concrete consistence, and is much less frequently met with than either of the other species.

HISTORICAL CASES.

Prominent foreign and native authorities furnish us with the following on this subject:

Dr. John Hunter, of England, examined a case in which there were over a thousand gall-stones, of various sizes and forms. Morgagni, a French authority, reports a case in which there were three thousand six hundred and forty-six, most of which were very small in size,—of the calibre of a bird-shot. When thus numerous they are usually small. Hildanus makes mention of one that weighed eighteen drachms (2 oz. and 2 drachms). Dr. Baillie reports one the size of a hen's egg.

Dr. Powell states that gall-stones are comparatively rare in hot climates. This may be due to a more liquid consistence of the bile itself.

Thos. Watson, M.D., author of "Watson's Practice," reports a case of a remarkably strong, healthy man, over 60 years of age, who, while engaged in inflating an air-bed, by blowing into it through a tube, suddenly felt a pain in the right side of the epigastrium, near the edge of the false ribs. The pains recurred at intervals; and a jaundiced condition ensued, in two or three days, until the skin became intensely yellow. This attack came on June 1st, 1854, and continued more or less until the following August 29th. Liver became much enlarged, during this period, and very prominent. He had been subject to pains similar to these from his boyhood, which were referred by his former advisers to spasm of the diaphragm. He had a considerable accumulation of fat about the abdomen. The liver became enormously distended before his death. Post-mortem

revealed the liver full of bile, also the gall-bladder; the latter being much thickened, and was found occupied with numerous calculi, moulded one upon another, presenting irregular forms and outlines. One large one presented the form and shape of a horse's hoof; and this one completely plugged up the ductus communis choledichus, near the duodenum. Branches of the hepatic ducts, in the liver, were so distended as to present little reservoirs of bile and mucus. "Some of these calculi must have been of very old date;" continues the writer, "his life was extinguished in thirteen weeks by the mere occlusion of the biliary ducts, and the complete barring up of the bile in the liver."

Dr. Budd relates a case in which a patient was tolerably well preserved and nourished, for a period of thirteen months, in a state of deep jaundice; and another in which a woman lived eight months in that condition, and five months after jaundice set in, bore a child which she was able to nourish up to the time of her death, viz., three months.

Biliary concretions seldom form in children; and they are much more common in women than men. They occur more frequently in persons of corpulent habit, and those who lead sedentary lives, use generous food, sleep much, and neglect their bowels. It is stated that in England five-sixths of the cases occur among women.

Dr. E. Wallace presents an instance of a gall-bladder entirely filled with upwards of forty large calculi.

Dr. Budd's work presents an illustration of three large calculi, contained within the gall-bladder, and the cystic duct likewise occupied; all of which were encrusted over with pure cholesterin.

Watson states that the ordinary biliary calculi consist in a great measure of cholesterin; which Dr. Prout adds is some modification of the oleaginous principle. He also states that cattle are subject to these formations, when long confined to their stalls in winter time; and it has been noted that they recover from the ailment after being turned out into the green pastures.

Gall-stones are more common between the ages of forty and fifty than at any other period of life.

Dr. Bence Jones reports a case of gall-stone, (proportions not stated), presenting a brick-red color. Beale accounts for the red color, by suggesting that it is due to disintegration of the blood corpuscles depending upon the activity of the oxydizing process going on in the organism; and he adds, "but the whole subject of the production of the peculiar coloring matter in the living body is still involved in the greatest obscurity."

Dr. Watson, whom we have already quoted, reports a case from which 1300 gall-stones were removed after death. Gall-stones are sometimes found in the tubuli billiferi and biliary ducts, and occasionally in the bowels.

In the Memoirs of the Royal Academy of Surgery, at Paris, Vol. I, London edition, 1770, page 3, Memoir I, by M. Petit, reference is made to the case of a lady, to whom the author was called in consultation. She was afflicted with a tumor, in the region of the liver, which was regarded as an abscess by all present, except M. Petit; and accordingly it was proposed to open it; he declined to do so, as he did not agree with his compeers, but rather regarded the tumefaction due to accumulated bile in the gall-bladder. One of the consulting surgeons changed his opinion, and agreed with the author; the balance followed their own way and operated. The tumor was opened without him; and he states he never knew how it was opened, or the quality of the matter it discharged; but only learned by public report that the wound remained fistulous.

Seven or eight months afterwards, the patient consulted M. Petit for the cure of her fistulous opening; which discharged a yellowish liquid; and to ascertain its nature he tasted it and found it to be pure bile. She then passed into other hands; the fistula was then dilated and a gall-stone, or calculus, was extracted, such as often form in the gall-bladder. On another occasion, prior to this, the author was about to proceed to open a tumor, in the region of the liver, and of so large a size as to closely resemble an encysted dropsy. Tapping was accordingly performed, but instead of serum it discharged two pints of very green and glutinous bile. Another case was also mistaken and operated on a few days later, and with a like result. Both cases proved fatal. In a third case that occurred to the au-

thor, he was about to make an operation, and went so far as to incise the integument, when the thought of bilious matter entering his mind, he decided to go no further, closed up the wound, and let it unite.

In the same volume, pages 25 and 26, will be found a report of another case by M. Petit, of an operation for the removal of a biliary calculus, in the case of Madam Tibergeau. He states, "The puncture of the gall-bladder being made with a grooved trocar, we are to let part of the bile run off, and whilst the rest is running out, introduce into the canula of the trocar a button probe of a due length, and so pliable as to yield to all the inflexions necessary to make an exact search in every part of the gall-bladder. Then, if we perceive any stone, we are to withdraw the probe, and without taking out the canula of the trocar, slip a sharp bistoury into its groove, and make as large an incision, as we think proper, to open at once the teguments of the gall-bladder which adheres to them. Then we are to introduce the forefinger of the left hand into the cavity of the bladder, in order to feel for the stones; and afterwards by the assistance of the finger, and a pair of forceps proper for this operation, we lay hold of the stones with the instrument, and extract them; after which we make a fresh search with the probe, and, if we find any more stones, extract them as the others, and when we are very sure there are no more, the patient is to be dressed, as we shall hereafter direct on other occasions."

He describes the case then of Madame Tibergeau, who was operated upon, as follows:

"In reality this lady had a tension of bile in the gall-bladder, which was opened on the supposition of its being an abscess, and the wound did not reunite but remained fistulous. Some months after, the patient desirous of having her fistula cured, submitted to the operation proposed to her, and accordingly there was found at the bottom of the fistula, that is, in the gall-bladder, a stone as large as a pigeon's egg, which was extracted."

Nothing further is stated by M. Petit as to whether the case was a success or not. It is to be presumed, however, that it was, as he strongly advocates this method of extracting biliary calculi, when thoroughly diagnosed as such.

The same author reports a case in his own field of practice, of a man forty-five years of age, who had "some fits of a fever and a cold." The patient came to him presenting the following symptoms, which give a striking feature in aiding the diagnosis of the catarrhal form of such cases. Patient was emaciated; had a dry, frequent, short cough; had a good appetite, and slept well; digestion, however, was bad; was suddenly seized with a general extravasation of bile. Examination of the liver revealed no great amount of hardness, and patient felt no pain in it; there was some swelling in the hypochondriac region, beyond the middle of the epigastric region; urine was copious, but turbid and red; his stools were whitish, resembling clay; a second swelling was noticed like a round, hard tumor, situated above the one already mentioned, and quite prominent above the surface of the abdomen. Patient lost his appetite and taste as the disease advanced; he gradually grew weaker, and died. Autopsy revealed a tumor, formed of the gall-bladder, extending along the hypochondriac region, to the centre of the epigastric region, having the form of a large cucumber, its upper part adhering to the peritoneum, and the right side pressing the liver against the false ribs and pressing upwards the diaphragm; likewise the stomach, ileum and colon were pressed upon. The tumor proved to be the gall-bladder extremely dilated. It contained, upon opening it, five pints of a limpid but viscid and bitter liquid; beside, there were sixty gall-stones removed; these were of various sizes, proportions not mentioned.

This case appears to have been primarily from catarrh of the excretory structures of the liver.

Another case, from the same author's pen, and still more remarkable than any yet reported, is that of a lady about sixty-five years of age, who for several years was subject to "hepatic colics" and "hypochondriacal vapors." A tumor appeared on the right side of the abdomen of a "scirrhus" nature. This growth became enlarged to such extent, as to cover the side, from the floating or false ribs downward to the crest of the ileum. At this time the patient was not afflicted with her colic, or any other symptoms, which would indicate any obstruction of the "biliary strumers" (ducts). She allowed her case to be

neglected, until she became subject to "violent fits of the colic," which were accompanied with nausea, fever and restlessness. She now sought advice, and it appears that for a period of three years the patient underwent a course of heroic treatment, after which the tumor in the side became painful. The tumor was poulticed for two months; when it opened spontaneously, discharging for some months, following; which diminished this *scirrhous tumor* by dissolving it. Fistulous openings resulted; which closed and opened alternately, without any marked symptoms, except slight pains in the part and seat of the tumor. At a later period, the patient was again attacked with violent pains, followed by the re-opening of the old fistula; from which suddenly there flowed a large quantity of fluid, that presented the consistency and color and taste of bile. During twelve days succeeding, there escaped from this opening about two pints; after this period the flow of bile ceased; the opening also closed.

For a third time, and at a still later period, a fistulous opening occurred; from which alternately flowed a serous bile and fluid-like discharge. The symptoms of pain, nausea, restlessness, etc., seemed to be present or absent, according as to whether the aperture, or fistula, was closed or open. Under the exhausting effects, and by frequent and recurring attacks, as described, the patient became afflicted with a complication of phthisis, which terminated fatally.

Autopsy being made, the gall-bladder was found adherent to the surrounding structures, viz., peritoneum, duodenum, stomach, etc. A probe passed through the main sinus entered up into what had been the gall-bladder, and, in its route, passed through a tube-like structure, of very dense nature, an inch and a half long, and communicated with the gall-bladder within. A diverging sinus from this, was also found leading to what appeared to be an old abscess formation, in the same vicinity, but located in the muscles, viz., internal and external oblique muscles. The gall-bladder seemed to have lost its identity and form. There were also found some offshoots of other elongations or sinuses; in three of which, gall-stones were found, one in each, embedded there. The location of these calculi was as

follows: one at the side of the sinus that led into what had been the gall-bladder; the second one, near the outlet of the cystic duct; the third at a point midway between the two, and under the jejunum, to which the gall-bladder was firmly adherent. The parts about this region were so co-mingled, as to form an almost undistinguishable mass of disintegrated organs.

We will here take occasion to propound the question that has revolved in our mind: why cannot biliary calculi be satisfactorily diagnosed and located, then be removed through an incision made into the gall-bladder, same as in operation by lithotomy in urinary calculi of the bladder or kidney, and without necessarily causing a fatal issue?

It occurs to us that some American surgeon, when an opportunity offers, may inaugurate this operation, without waiting for some European adept to set the example.

In the *Medical Record*, Vol. XVII, No. 9, page 238, N. Y., February 28th, 1880, an account is given of the presentation by Dr. Putnam Jacobi, before the N. Y. Pathological Society, of the gall-bladder and bile ducts from a patient, who during life had suffered at intervals from severe colic in the right hypochondrium. The first attack followed a painful confinement with twins. The paroxysm was preceded by a severe purgation, occasioned by the use of podophyllin, from the effects of which the patient fainted. This first paroxysm lasted almost three days; was followed by great soreness in the hypochondrium, persisting for a week. At this time the patient was seen by Dr. Sands, who naturally suspected biliary colic, but declined to give an opinion in the absence of jaundice, vomiting, etc., and the non-appearance of gall-stones in the fæcal passages. An interval of freedom from pain for two and a half years followed. She then had a second attack, consequent upon great fatigue; a third about two months later, which came on during dinner. She complained of intense pain upon pressure over the region of the gall-bladder; no apparent enlargement in the right hypochondriac region. The patient always referred her pains to the right half of the epigastrium, and described them as agonizing; the paroxysms lasting from one-half to two hours; scarcely relieved by ano-

dynes, not even much by chloroform. On one occasion, after the inhalation of chloroform, vomiting took place, and was followed by relief from pain; from which circumstance the doctor advised the use of an emetic, viz., sulphate of zinc, whenever the attacks recurred, which was always followed by relief.

During the latter years of the patient's life, these paroxysms returned at irregular intervals, generally of two or three months; but occasionally they happened twice in one month; usually occurred after a few hours of great fatigue, or of moral depression. In the later attacks, the entire epigastric region was involved. *Post-mortem* revealed the following conditions. The gall-bladder was found enlarged, adherent throughout to its fossa, not projecting beyond the free border of the liver, its mucus coat thickened, and in a chronic state of inflammation; its cavity was filled with mucus, and impacted gall-stones, nearly all the size of a cherry stone. One, however, was as large as a walnut, and lay just over the cystic duct, temporarily occluding it. None of the hepatic, or common ducts, were abnormally enlarged. The pyloric extremity of the stomach was in a state of extreme hyperæmia, and the mucous membrane, lining the part, appeared as if abraded. There was no evidence of any gastric ulcers; and the mucous membrane of the stomach presented generally a pale color.

Remarks.—The relief afforded by the emetic would have been due, on the one hand, to the evacuation of the contents of the irritated stomach; on the other hand, to the forcing back into the gall-bladder the presenting calculus. Since there is—normally—a close concert of action between the pyloric valve and the gall-bladder,—the bile commencing to flow from its reservoir simultaneously with the dilatation of the pyloric valve (which permits of the escape of the chyme),—the question may be here asked, whether the chronic hyperæmia, found in the pylorus, was not the expression of a *reflex irritation*, taking its origin from the mechanical irritation, induced by the contents of the gall-bladder. The nerve connections, between the filaments of the hepatic plexus, and such branches of the cardiac plexus as go to supply the pylorus, viz.: the pyloric branch of this axis, are intimately related. By regarding, therefore, the pe-

culiar points in this special case, the correct diagnosis of any similar case could *not be readily mistaken*; the most noteworthy fact being the absence of three important symptoms usually present in all such attacks, viz., *jaundice*, *vomiting* and *tumefaction* in the right hypochondriac region; and it might be added, the non-appearance of any "debris" or "biliary calculi" in the alvine evacuations.

Prof. A. R. Thomas, in his work on "Morbid Anatomy," relates a case of a man aged sixty, who suffered from several severe attacks of bilious colic, and finally died in June, 1863, from an attack of four days duration, induced, as it appeared, from exertion, while working in his garden, digging with a spade. The first symptom experienced was a sensation of something giving away in his side, and this was followed by an attack of severe pain. Chill and fever soon succeeded, resulting in speedy peritonitis, and death on the fourth day.

Autopsy revealed intense peritonitis throughout the entire abdominal cavity; which contained nearly a quart of greenish sero-purulent fluid. Also slight plastic adhesions at various points, uniting the intestines with the abdominal walls, while old, firm, and extensive adhesions were found between the same, and the liver and gall-bladder. The latter had evidently been much distended; and through an opening or rupture, the contents of the gall-bladder had escaped into the peritoneal cavity; leaving behind, and in situ, a single calculus, of a regular oval form, and one inch in its longest diameter.

Occasionally, gall-stones are vomited from the stomach; to which point they may migrate either by reversed peristaltic action, or by ulcerating their way through the intervening structures, and thus establishing a direct fistulous opening, which may become permanent. Fatal results may ensue from the impaction of large gall-stones in the intestinal canal. In rare cases, gall-stones have worked their way into the ureter, portal vein, and vena cava.

Prof. A. R. Thomas reports two additional and recent cases of single calculus. The first, Mr. B., a resident of Philadelphia; of whom he states: "I was called in consultation with Dr. J. G. Howard, two or three times before death. The promi-

nent symptoms were jaundice, great prostration, congested liver and gall-bladder, with *little pain or tenderness*; diarrhœa, with white, offensive discharges, was also present and occasioned vomiting. *Post-mortem* revealed an abscess between gall-bladder and abdominal walls, in which was a large gall-stone nearly an inch in its longest diameter; common bile duct, completely closed."

The second case was: "A lady of about 75, always before healthy; had, while in the country on a visit, an attack of gastritis, with vomiting and pain in region of stomach. Upon returning to the city, in September, (1878), found her much jaundiced, with poor appetite, clay-colored stools, pain and tenderness in region of gall-bladder. She had no paroxysms of pain, as from gall-stones.

Diagnosis.—Catarrh of common bile duct, with stricture of the same. A tumor was detected in region of gall-bladder, which continued to enlarge until it reached below the umbilicus, pear-shaped and hard; considerable ascites and anasarca; white stools and bilious urine was very marked. Peritonitis finally set in, of which she died April, 1879.

Post-mortem showed the ductus communus closed; gall-bladder greatly enlarged, and containing over a pint of thin, watery bile; cystic and hepatic ducts enormously distended; nearly as large as the small intestine. All the parts were adherent from inflammation."

Throughout our own experience, which we will here briefly narrate, we have met with twenty-two severe cases (beside a number of milder ones). Five of these occurred in our own field of practice; the remainder were consultation cases, to which we were called at various times.

From this number we will select a few, on account of their striking character:—

Mrs. S. W., resident of Canada West, now Ontario, was of English birth, æt. 47, dark complexion, spare habit, nervo-bilious temperament, had been an invalid for seventeen years, having had five severe attacks of bilious colic during that time, and scarcely ever free from some disturbance of the liver. The patient stated that she had contracted the habit of taking

purgatives of various kinds since her earliest recollections ; and as a consequence chronic constipation ensued. These attacks were always preceded by a deep-seated, heavy pain, followed with swelling in the right hypochondriac region ; the former extending upwards and under the right shoulder-blade. Severe headache, accompanied with nausea and vomiting of bile, followed, together with marked prostration. The patient's bowels were costive ; urine scanty and high-colored. She stated that she had passed periods from five to seventeen days without a passage from the bowels, excepting an occasional small fragment of hard stool, which was passed with considerable straining. These periods were always followed by a bilious attack ; relief from which was obtained only after the passage of a number of biliary calculi, together with copious stools, induced by the free use of purgatives. *These stools appeared undigested and like tar in color and consistency.* There were *severe cutting pains over the region of the gall-bladder*, later in the attack ; also *rumbling in the bowels*.

In this instance the symptoms were the same as in the preceding attacks, for which we prescribed Leptandrin, 3d trit., every two hours, and also gave, in connection therewith, at alternate hours a tablespoonful of sweet oil. After the sixth dose of Leptan. was given, the patient felt some relief ; and coincident with this relief, she passed a copious stool, in which was found a biliary calculi of the color and proportions of a horse-chestnut, weighing 210 grs—Troy weight. The patient fully recovered from this attack ; the remedy being continued for a period of three weeks, three doses daily, which overcame the constipation effectually. It was during the spring of 1859, that we were called upon to attend this case. We will here take occasion, to state that we had advised this patient, to take the remedy, Leptandrin, as a preventive to recurring attacks, as soon as any symptoms indicating such a return, were present. And we learned subsequently, some six years, that the remedy had performed its mission satisfactorily.

Still later, in the fall of 1878, we were informed, through a reliable source, that the patient was still living, enjoying good health, and up to that time there had been no return of her former attack.

Two other cases, presenting similar symptoms, differing only in the size of the calculi, came under our care and treatment during the fall of 1867, and terminated in the same successful manner.

Another case of interest was that of a gentleman, Capt. B. D., æt. 56, American birth, light, florid complexion, sanguine, bilious temperament, full habit. He led a sedentary life, was given to high living, and using spiritous and malt liquors freely. Had been subject to biliousness for twenty years; and had passed through, on four previous occasions, very severe attacks of bilious colic; followed with the passage of numerous gall-stones, about the size of a pea; which, from his description, were of the inspissated or soft variety. The patient's symptoms at the time we were called, were as follows (he having suffered with threatenings of an attack for three days prior to our first visit): Severe pressure, as from incarcerated flatulence, under the short ribs on the right side. Contractive pain in the hypochondriæ. Liver swollen and indurated, and very sensitive to contact. Jaundice; bowels costive; vomiting of light-green bile; urine of usual quantity, high-colored and showing the presence of bile. Taking into consideration the habits of the patient, together with these symptoms, *Nux vom.*, 30th trit., was prescribed and repeated every two hours, until some relief was afforded. A favorable change set in after the twelfth dose was taken; all the symptoms abating, except the jaundice and constipation, for which condition *Merc. dulc.*, 3d trit., was administered at two hour intervals. In the course of twelve hours, following the use of this remedy, a copious and firm stool passed; soon followed by several thin stools, in which were found three calculi, size of a hickory-nut, and still later, forty to fifty small ones, the size of a pea. The former were of a dense consistency, and of a dark mahogany color; when fractured, crumbly around their exterior, and composed mainly of biliary concretions; their centres presenting a circular, striated crystalline body, composed of cholesterine. The smaller ones were not closely examined, but their exterior appearance presented the same consistency and color as the larger ones. The patient recovered from this attack sufficiently to

regain a fair degree of health; but declined to change his habits of life. He remained under our charge for a period of six years, having occasional threatenings of his former attacks, which the timely administration of *Nux vom.*, 30th trit., always averted. It is a noteworthy fact that this same patient, about one year after his recovery referred to, had a severe attack of renal colic; and three months later we extracted from his urethra at a point mid-way of this passage, quite a large *renal calculus*, the size of a coffee grain, which presented a pale salmon color, and was of the consistency of chalk, being composed chiefly of phosphate and carbonate of lime. The patient then passed out of our hands and took a long sea-voyage to a hot latitude, contrary to our advice, in the vain search for health. While on his return, he was seized with a very severe attack of sea-sickness, followed with bilious colic, which terminated fatally on the fifth day.

Mrs. S. E. W., aged 43, American birth, dark complexion, spare habit, marked bilious temperament. The following is the history of the case as we obtained it direct: Had been subject to bilious attacks since her earliest recollections; aggravated no doubt by the abuse of cathartics and purgatives, to which she had accustomed herself. Had passed through four severe attacks of bilious colic, at irregular intervals, since her twenty-seventh year, accompanied, each time, with the passage of a considerable number of small gall-stones, varying in size from an apple-seed, to that of a small cherry. She had suffered, more or less, with a severe aching pain low down in the right hypochondriac region, extending toward the epigastrium. This pain migrated, and gradually changed its course and locality, descending perpendicularly, by slow stages, toward the right iliac fossa, and located there; having taken four years in making this change of base. She described a sense, accompanying the pain, as of a moving object within. At the last point mentioned, the seeming object referred to, remained stationary for a period of about three months, the pain continuing more or less. By the advice of her medical attendant, she took her usual doses of purgatives, which was followed by a severe catharto-emesis effect, accompanied with a move-

ment of the previously dormant object, and a return of the former severe pains. This condition continued for a period of two weeks, with scarcely an intermission of rest or relief from her pain, notwithstanding copious draughts of opium tincture were given. At this juncture the friends of the patient interfered, and demanded a change of treatment, and a dismissal of the attending physician, who, by the way, when asked for his *opinion* pronounced the case one of tape-worm, and remarked that he thought it would "pass before long." We were summoned to the bedside of the patient early in May, 1859, and found her laboring under the full effects of opium; and the air of the sick-room redolent with its odor. She was in such a deep stupor that we could not elicit any information from her; but were obliged to depend upon some of the relatives present for information regarding the former treatment, etc. We noted the following objective symptoms, viz.: the patient was extremely emaciated, the integument of the entire body was wrinkled, presenting a cadavaric, yellow, jaundiced hue. There was icterus of both conjunctiva, and contraction of the pupils, which were very sluggish under the stimulus of a bright sunlight. Breathing sonorous and measured; lips and tongue dry; patient uttered occasionally faint groans, as if in pain; pulse 110, rapid and small; temperature 103; abdominal walls collapsed. By making gentle manipulation over the right iliac and upper portion of the hypogastric regions, viz., along the ascending and transverse colon, as far as the umbilicus, a tumefaction was discovered located at this point, about the size of a goose egg, its longest diameter being in a transverse direction. To the sense of feeling the mass was partially movable, and the patient experienced pain when attempts were made in this direction. Not knowing the history of the case up to this time, we now gathered the antecedents, (the particulars of which have already been given) and thereupon we made our diagnosis, pronouncing it a case of obstruction of the colon, from the presence of a large biliary calculus. To overcome the ill-effects of the drugging which the patient had undergone, we administered Nux vom., 30th trit., prepared in water and given in teaspoonful doses, repeated every half hour, until six doses

were taken, which were swallowed with difficulty. The remedy, however, accomplished the desired effect in good time. Learning from a member of the family that the patient's bowels had been thoroughly evacuated of fecal matter, forthwith we set to work to remove the obstruction, whatever it might be. A flexible stomach tube, well oiled, was introduced high up into the bowel until it met the obstruction; then by means of a stomach pump, an enema mixture, composed of heated lard and a wine glass full of brandy to the pint, was thrown slowly up into the bowel until it was moderately distended, when the obstacle seemed to move slowly toward the descending portion of the colon. It then disappeared and could not be felt, and the patient experienced considerable relief from her pains, but still felt the presence of something lodging deep down in the left iliac fossa. The patient at this time appeared very much exhausted, as her stomach being so irritable, could not contain anything excepting a little cool water, which she desired to have frequently, but took only a sip at a time, though with avidity. Regarding Arsen. alb. the appropriate remedy for this condition, the 30th trit. was given every two hours in water, and an enema of four ounces of beef-tea, with half an ounce of pure brandy added, was gently passed up into the rectum, which was retained. After the third dose of the remedy had been taken, the patient passed into a quiet sleep; (this was at 6 P.M.) and remained so throughout the night, waking only three times to ask for water. To abbreviate our remarks in regard to the further treatment of the case, we will simply state that the patient regained her strength steadily, under the action of the last named remedy, given at longer intervals as she progressed toward recovery, together with three nourishing enemata, of four ounces each, per diem, thrown well up into the bowel; which treatment was continued for a period of one week. She still complained of a dull, heavy, aching pain, however, which she located deep down in the left iliac fossa, accompanied with a constant desire to pass stool, aggravated by sitting up, and especially when attempting to make stool, which she had not accomplished for a week past; otherwise she continued to improve, and was then able to take nourishment *via* the stomach.

Feeling convinced in our own mind, that there was something to come away, and that it was lodged in the sigmoid flexure of the descending portion of the colon, we proceeded to repeat the enemata of heated lard, *minus* the *spts vini gal.* Upon passing the tube up into the rectum, urging it on through the sigmoid flexure, we encountered an obstruction, firmly impacted at its uppermost portion. The pump was applied and the enema gradually thrown up. Two ounces were retained and the balance, some six ounces, were rejected; which result confirmed our opinion.

Six other similar treatments were given at intervals of from two to three days apart, when at the close of the seventeenth day of our services, the patient passed a very large biliary calculus, followed by a copious stool and accompanied with extremely severe pains, which the patient termed "agonizing." The weight of the calculus was 510 grs.—Troy; its outward appearance was ovoid and egg-shaped, convex at the larger, and abruptly flattened off at the smaller end. Was covered over, on its outer surface, with a thick coating of inspissated mucus, so dense that it could not be readily removed with water. On making a transverse section through the centre of the mass, the greater portion of it was found to be composed of a dark brownish-yellow substance, of a semi-concrete nature, about the consistency of burnt lime; its chemical constituents were mainly of condensed biliary concretions, which Wagner terms "bilirubin," mingled with carbonate and phosphate of lime, biliary acids and margarin.

Its nucleus or centre was much of the same shape, only convex at both ends, and was composed of pure cholesterin about the size of an almond. The patient exhibited excessive lassitude and languor, which was aggravated by the efforts she made to pass the calculus; after which she fainted, and was restored with considerable difficulty by means of stimulants, and *spts ammonia* applied to the nostrils. Excessive debility followed, accompanied with cold sweat. For this condition we gave China off., 30th trit., and repeated every two hours, ordering a concentrated fluid diet to be given in small quantities, as often as the stomach would bear it.

Gradual recovery ensued from the action of the last-named remedy, and in the course of two weeks she was able to leave her bed. We subsequently advised a course of treatment with China off., as a preventive to the recurrence of any further attacks, according to the recommendation of Dr. David Thayer; and when we last heard of the case, which was in November, 1878, the patient had not been afflicted with any further severe attacks since the one we have reported, which occurred in the month of June, 1869.

We will close the report of our own cases by stating that, in commendation of the remedy China, we desire to add our testimony to its efficacy as a specific and a preventive against recurring attacks in that class of cases referred to by Dr. Thayer—having treated successfully, with this remedy, fifteen such cases.

A case of biliary calculi of great interest, is reported by Dr. L. Hoopes, of Downingtown, Pa., in "*The U. S. Med. Investigator*," Chicago, June 15th, 1879, p. 527, which terminated fatally. The patient, prior to her death, had passed through several severe attacks of congestion of the liver, but in none of them had biliary calculi been suspected. *Post-mortem* examination, six hours after death, revealed the liver much enlarged, weight six pounds. Upon opening the gall-bladder, which was also much enlarged, it was "found to contain *four hundred and eighteen* calculi, ranging in size, from a grain of white mustard seed, to two and three-quarter inches in circumference, and three-quarters of an inch in diameter. Dr. Hoopes reports, "these calculi appear to be composed chiefly of cholesterin, though I have not yet had them examined under the microscope. The lining membrane of the gall-bladder was highly inflamed, and the cystic duct completely occluded by adhesive inflammation."

"The kidneys were somewhat congested and enlarged. The ovaries were considerably atrophied."

There are several points of marked importance, embraced in the history of this case, that will serve as a warning, as well as a guide, to the careful reader and discerning practitioner. In one particular it is similar to the preceding one, reported by Dr. Jacobi, viz.: in the absence of the usual train of symptoms

present in attacks of bilious colic; as may be noted by the following indications reported by attending physicians, Drs. Hoopes and Pratt. "*Region of the liver swollen, heavy and sensitive to contact; constant desire to take a full breath; constant nausea, as if she would vomit; pain in left side of back, lumbar region; throat sore on left side. Feels constantly too full, and would like to belch, but cannot; worse after eating. Very weak and considerably emaciated; no appetite; remittent fever; rheumatism of left thigh, which was swollen to double its natural size, and also in the articulations of the jaws, so that she could not open them more than a quarter of an inch; liver very much congested; could not sleep on account of rheumatic pains; very nervous and despondent.*" We have purposely italicised the symptoms that might properly be termed *biliary*; but they are too limited in this instance upon which to base a definite diagnosis; especially when accompanied with other and complicated ones, foreign to the diseased condition. Another point that militated against the nature of the disease, having been one of biliary calculi, was the age of the patient, only 26 years; as it is very rare to meet with a case in one so young, where calculi have been found of such proportions, character and number. This is the only case of the kind on record, as far as our knowledge extends. There is still another and important point to be considered, of which no mention is made, viz.: a thorough examination of the patient's alvine evacuations, at the time of any of her attacks. The question propounds itself to our mind, that if this had been done at the time of and after one of her earlier attacks, and before the occlusion of the cystic duct occurred, might there not have been found evidence in the stool, that would warrant a correct diagnosis? This being a valuable and accurate *objective* symptom, and a never failing one. Great credit is due to Dr. David Thayer, whom we have already quoted on this subject, who so succinctly describes the peculiar character of the stools, in many cases that he treated successfully; which would have been doubtful had he not recognized the presence of biliary concretions. He describes them as of a scybilae-like nature, and of a yellowish, bilious hue; somewhat of the consistency of a firm fœcal evacuation,

and massed up together; compressed into various shapes and forms, which by an optical examination alone might be readily mistaken for a portion of impacted alvine secretion; but by separating one of these irregularly shaped bodies from the mass, and compressing it between the fingers, a sense of feeling may be noted as of a concrete substance. By dissolving them in oil, the residue will be found to be condensed or inspissated biliary secretions. These bodies when imprisoned for a length of time in the gall-bladder, or any of the hepatic and biliary ducts become incysted, and gradually take on a calcarious formation, by the crystalizing process. After which condition the usual course they take—when cystic occlusion is present—is by inflammatory action to suppurate their way through the walls of the gall-bladder, or any other structure of the liver in which they locate and form; and then dropping into the peritoneal cavity, by their presence exciting mechanical irritation, followed first by circumscribed peritonitis, then abscess septicæmia and death; as in the two cases heretofore noted, reported by Prof. A. R. Thomas.

It strikes us that had the case in point been more clearly defined in its symptoms, and no occlusion of the cystic ducts present, it would have offered a fine opportunity for removal, by operation with the surgeon's knife.

ADDENDA.

It will be remembered that we have already referred to efforts made in the direction of surgical interference by M. Petit, nearly a century and a quarter ago; but we have only presumptive evidence that one operation, at the most, proved successful. Our attention has been attracted recently to a brief article on this point, vide *Hom. Times*, May, 1880, Vol. 8, No. 2, page 48, under the heading of "*Treatment of Hepatic Calculi*," which reads as follows: "Dr. T. H. Buckler, *N. Y. Medical Journal*, in referring to Dr. T. J. Thomas' enumeration of the operation of cutting into the gall-bladder, as one of the recent surgical triumphs, asserts that such procedure is unwarrantable. Cholesteric gall-stones can always be dissolved away by large

doses of chloroform, especially if combined with succinate of iron. The latter agent also may alone accomplish the desired solution and effect a cure. In Dr. B's last three cases, treated successfully, he gave ten drops of chloroform every four hours, and a teaspoonful of Steward's hydrated succinate of the peroxide of iron, half an hour after each meal. He has sometimes given a teaspoonful of chloroform every six hours, without causing any bad symptoms, and with the result of a cure within a week. The succinate of iron contains, according to Dr. Buckler, more nascent appropriate oxygen than any other known therapeutic agent, and is one of the best ferruginous preparations, apart from its solvent powers on gall-stones. It is better than nitric acid in affections of the liver. Chloroform, we are told, on being swallowed, passes into the acini of the liver, then into the bile of the gall-bladder, where it dissolves the gall-stone with the inexorable certainty of mathematics. Dr. Buckler's experience with ether, and with the various mineral waters has led him to consider them of no value in this trouble."

We would here suggest the interrogation, and without any desire on our part to cast doubt on Dr. Buckler's assertion, we would like to know how he proposes to diagnose a cholesterin calculus from any other variety, unless there is evidence of such, accompanying the stools passed by the patient; and if so, what warrant can he give us that he has accomplished the process of solution of a cholesterin calculus while in situ, in any of the ducts of the liver, the gall-bladder and its ducts, or while in its passage through the intestinal canal. Again, how does he propose to dispose of the other varieties of bilious calculi, by any process of solution with medicinal agents administered to the patient? We are fully aware that there are many chemical agents that possess the power of dissolving any, or all of the many forms of biliary, renal and cystic calculi, when *immersed* in a solution of these agents, and after a given time; but we have yet to learn that a process like this can be conducted with safety to the patient, or to the organ involved. Until we have further, and more positive evidence than this statement of Dr. Buckler, we cannot accept his theory, but will

suspend our judgment until then. We have heard of remedial solvent agents before, which have been recommended, and pronounced infalable curatives for renal and cystic calculi, as well as gouty concretions of the joints, but they have all passed away with other unscientific discoveries. In the meantime we rejoice to learn that Dr. T. J. Thomas has been successful in relieving his patients of biliary calculi by the skillful use of the knife, and that he justly deserves the credit of having contributed one more triumph to the science of modern surgery. As far as our knowledge goes, he is the first and only American surgeon who has accomplished a successful issue in this direction.

THERAPEUTICS.

The following remedies will be found efficacious in the treatment of biliary colic, when given according to the indications noted after each one.

Aconite.—Inclination to vomit after eating anything sweet or fat, vomiting with nausea and thirst, general heat. Vomiting of blood, with or without mucus, or of green bile. Compression of the navel, with spasmodic pressure at intervals. Inflammation of the peritoneum. Drawing pains in the abdomen. Paroxysms of anguish, fear of death.

Arsenicum album.—In violent cases, patient lies as if unconscious, countenance expressive of death, and is very pale, covered with sweat of anguish, in a state of marked apathy. Syncope, only interrupted by occasional and fruitless efforts to vomit. At a later period, when the attack sets in with severe and increasing cardialgia, and colicky pains of the most severe and terrible kind, with much burning in the parts affected. Frequent vomiting, excessive weakness and prostration, constipation and the countenance betokens extreme distress with cold sweat.

Chamomilla.—Best indicated in a case excited by chagrin, especially if at meal, and patient is of a choleric temperament; said attacks will invariably occur or set in, when these causes

are present. Painful pressure in the pit of the stomach, and hypochondria, especially after eating; with regurgitation of ingesta, followed by bitter or bilious vomiting; with restlessness, tossing about and violent headache, as if head would burst. Repeat frequently.

Colocynthus.—When attack is caused by internal gnawing and humiliation, or some severe and undeserved treatment, with bilious vomiting and painful pressure in the region of the stomach. Drawing, searching, digging pains, aggravated by expiration, or laughing. Pressure and flying pains in the hepatic region. Constrictive feeling in upper part of abdomen. Cutting pains in abdomen, with chilliness and lacerating feelings in lower limbs, from hips down. At each accession of pain, agitation all over the body.

Gripping in the abdomen, especially about the umbilicus and up toward the liver, like a cutting or squeezing, relieved by bending forward or on evacuating the bowels. Stabbing pain, running toward the pubes. Viscid, scant stools. Pap-like or doughy stools.

Bryonia alba.—Tension, burning or stinging in the region of the liver, particularly when touched, or coughing or taking full breath. Drawing in liver, extending to stomach and back. Hepatitis. Intolerance of least pressure, at pit of the stomach. Chronic constipation, hard, tough stool with protrusion of the rectum, or dry stool as if burnt.

Hard swelling in hypochondrium, and at umbilicus.

China off.—Pain in region of liver, as from ulceration when touched. Swelling of the liver. Infarctions of the liver. Violent colic. Pinching in the abdomen, obliging patient to bend double. Lassitude and languor, mental and physical. Excessive debility, with marked disposition to sweat, during sleep and motion. Yellow color of skin, jaundice. Excessive prostration, from loss of fluids.

Dr. David Thayer, an eminent authority of the homœopathic school, pronounces this remedy as the *specific* for this class of periodical colics, and reports many successful results, from all

parts of the country, the patients having resided in and been subjected to the various climatic influences of the whole United States. He designates the class of cases, especially calling for the use of this remedy as follows:

“All the symptoms which arise from obstructions in the gall-bladder; the colic; the periodicity of its recurrence, (though the periods of its return are often very unequal and irregular,) also the yellowness of the skin and of the conjunctiva; the constipated state of the bowels; the scybalated character of the dark, greenish stools, the scybala varying in size from that of the largest nutmeg to that of sheep dung, and even smaller than the smallest peas.”

He also adds, that he distinguishes this form of colic from other varieties as follows:

“I require my patients to lie flat on the back, with the legs extended. I then request them to tell me if I hurt them, while I make equal pressure, with the end of the finger on all parts of the abdomen; avoiding the exact location of the gall-bladder till my last pressure, when, if it is a case of gall-stone colic, they will cry out.” “While this experiment will generally satisfy me, as to whether I have a case of biliary obstruction, or not, yet I do not pronounce it a case of gall-stone till I am confirmed in the opinion by the corroborative indications above given.”

“In many of the cases of periodical colic, yclept bilious, gall-stone, etc., no calculi, properly so called, are found in the excrement, search for them as diligently as one may; the reason of which may be found in the above mentioned small, hard, roundish and greenish-black scybala, which are passed with the dejection after the subsidence of the colic. Under the action of an aperient (3 or 4 $\bar{3}$ of olive oil, or even more if required), the discharge of large quantities of these greenish-black *ovales* may be facilitated; greatly to the relief of the sufferings of the patient.”

Digitalis purp.—Most violent colic continually. Pinching or lacerating in abdomen. Lancination from pit of stomach to both sides and back, extending up the œsophagus. Tightness and

constriction about the hypochondria. Sensitive, and sense of pressure, in the liver. Cutting in the abdomen with tenesmus. Shooting and prickings in whole abdomen. Jaundice.

Cuprum acet.—Eructations tasting of copper. Constant nausea. Frequent violent vomiting. Frightful colic and convulsions. Distended abdomen, painful to touch or violent spasmodic pains in the abdomen. Violent abdominal colic. Enteritis. Pressure aggravates the pains very much.

Conium mac.—Aching in the liver, when walking. Painful lacerating in the region of the liver. Sharp drawing in the anterior part of the liver. Most violent colic. Swelling of the abdomen. Violent lancinations in the abdomen, daily, especially on right side. Frequent urging with stool. Tremulous weakness after every stool. Lancinations in the abdomen, as if knives were being driven in. Violent emissions of flatulence.

Cocculus.—Inflammation of liver and diaphragm. Compressive pinching in epigastrium, arresting the breathing. Lacerating in the intestines. Violent spasm of the stomach, griping, lacerating sensation in stomach. Pain in the hypochondrium, as if bruised.

Veratrum alb.—Distention of abdomen with ptyalism. Violent pressure in pit of the stomach. Vomiting of injeſta and green mucus. Vomiting of bile and mucus, then of black bile, and finally blood. Colic, from back toward umbilicus. Colic, after a cold. Sudden, pinching, colic, early in the morning. Marked prostration and debility of the whole body.

Podophyllum.—Jaundiced hue of skin, or more of a bronze color; tongue coated white, continuous headache. Pulse quick, hard, and full, but small; urine very scant and dark colored; urine contains bile. Constipation and diarrhœa alternated. Pain in epigastrium, extending to right side. No trace of bile in stools, nor vomiting of bile. Patient grows stupid towards evening. Severe chill and fainting. White clay-like stools.

Arnica montana.—Empty eructations, early in the morning. Eructations tasting of rotten eggs. Vomiting of coagulated blood. Stitches under the false ribs, arresting the breathing, when standing. Cutting pain above the umbilicus, especially when taking deep breath, and at every step. Colic resembling dysentery. Pressure in the region of the liver, with pressure as of a stone, both during expiration and inspiration. Sharp thrusts through the abdomen, from one side to the other. Burning, stinging pains, in the epigastric region. Fermenting in the abdomen. Sore pain in the abdomen, when coughing or touching it. Frequent small stools consisting of slime.

Calcareo carbonica.—Vomiting of sour water at night. Anguish in the pit of the stomach. Tension in the hypochondria. Sense of constriction below the hypochondria, with trembling and throbbing in the region of the stomach. Tension and pressure, in the region of the liver, as if the parts were very much enlarged, even unto bursting. Stitches in the liver during or after stooping. Frequent severe spasms in the intestinal canal, especially in the evening and at night, with coldness of the thighs. Writhing, cutting pain throughout the abdomen. Twisting sensation in the bowels. Pressure in the abdomen, with stitches in the pit of the stomach, from above downwards. Enlargement and hardness of the entire abdomen. Pain, as of rawness in the liver. Lancinations in the right side, below the ribs.

Laurocerasus.—Sticking pains in the liver, with pressure. Pinching pains extending from the hypochondria to the umbilicus. Beating and throbbing in the liver, as from an abscess. Lame, bruised pain, from the liver to the shoulder, at every inspiration. Distension of the region of the liver, with pain, as from subcutaneous ulceration, or, as if an abscess would break. Inflammation, with induration of the liver. Cutting pains in the entire abdomen. Burning in the abdomen.

Leptandrin.—Dull, aching pain, in the region of the gall-bladder; also throughout the entire right hypochondriac region,

extending to the umbilicus, with much rumbling in the bowels. Cutting pains in the locality of gall-bladder. Profuse black, undigested stools, looking like tar, in color and consistency. Burning and distress, in the back portion of the liver. Dull aching, burning and distress in the region of the gall-bladder, with frequent chilly feelings along the spine. Pain of a hot, aching character, or sharp, cutting pains, in region of gall-bladder. We will here take occasion to add, that we have had very decided, and prompt results follow the administration of this remedy in three cases, in which the foregoing symptoms italicised were present.

Nux vomica.—Pressure, as from incarcerated flatulence, under the short ribs, on the right side. Contractive pain in the hypochondria. Tensive pain in the region of the liver, as if there were an abscess present. Stitches in the region of the liver, aggravated by contact and motion. Swelling and induration of the liver. Jaundice, aversion to food, with fainting spells. The region of the liver is very sensitive to contact; will not admit of lying on it. Hepatitis, either acute or chronic.

Merc. dulc.—This remedy is an excellent one; especially if used as a preventive, in the threatenings which precede attacks of bilious colic. The following symptoms are usually present: throbbing headache, with giddiness; ringing in the ears; dry, bitter, pasty, metallic taste (and odor) of the mouth and throat. Dryness of the nostrils; jaundiced hue of the conjunctiva of the eyes; with deep-seated pains in the orbits, and heaviness of the eyelids. Patient complains of a dull, heavy, stupid feeling; inclining to sleep all the time, and awakes unrefreshed, at any time, with sluggishness of memory; which feelings disqualify him—mentally and physically—from attending to any business. There is intense throbbing in the carotids, accompanied with palpitation of the heart, excited by moderate exertion. Pulse full and bounding, not easily compressed; skin hot and dry, and yet the patient complains of chills through the back. Deep-seated, dull, heavy, aching fullness over the entire right hypochondriac region; extending up under the right scapula, relieved by pressure with the flat of both hands

over the first named region; except at a point corresponding to the region of the gall-bladder, where a pain is felt on pressure. Pain and weight in the epigastrium, extending into the right hypochondrium. Vomiting of ingesta, mixed with yellowish-green bile, and quantities of bile when the stomach is empty of food. Urinary secretions scant, and of a deep, yellowish color. Stools costive and dry, and of a pale yellowish color.

As a palliative measure, we suggest resorting to injections of warm sweet-oil high up into the bowels; likewise rubbed in while hot to the hypochondria. If too sensitive, apply by means of hot flannel compress, sufficiently large to cover the parts involved; and renew frequently; also give the oil internally, in as liberal quantities as the stomach will bear, and repeat frequently.

PERINEORRHAPHY:
ITS PAST AND PRESENT HISTORY,
WITH
REPORT OF CLINICAL CASES.

[Read before the Wisconsin State Homœopathic Medical Society, held at Milwaukee,
June 13th and 14th, 1878.]

PERINEORRHAPHY

THE term, *Perincorrhaphy*, or *Perincorrhaphia*, is derived from the Greek $\pi\eta\acute{\nu}\epsilon\upsilon$, *perineum*; and $\rho\alpha\phi\eta$, *suture*. Literally translated, means suture of the perineum, and is used in cases of laceration of the perineum. When we take into consideration the measurement of the female perineum, which is one to one and a half inches at its base, its shape being triangular when in its normal condition, and yet, during the last act of parturition, is extended to four and a half, perhaps six inches, which, of course, greatly attenuates it, is it surprising, then, that a separation of its continuity should occur frequently? Many of the cases, no doubt, are the result of ignorance, or a want of proper care on the part of the accoucheur and the midwife; the last-named being too often employed through mistaken economy. There are occasions, however, when this accident may occur in the hands of the most competent and expert practitioners.

The consequences and evils that often ensue, are so complicated and distressing, as well as mortifying to the patient, as to exclude her from the companionship of friends, and render her offensive, not only to herself, but likewise to every one near and dear to her, and seriously to undermine her health and strength. There is probably no one misfortune in the way of accident, that can befall a mother, and produce more misery and distress, than the condition which we are about to consider. Until a comparatively recent period, these cases were beyond the pale, or reach, of surgery. It is most frequently the result of parturition; rarely it has happened as a result of external violence, as falling astride of a chair; a kick, or a fall from a

height; the perineum coming in violent contact with some projecting object, as instanced in case XI. In one or two instances it has been caused by the horn of an enraged deer. In several cases from the horn of an enraged cow.

Partial lacerations are quite frequent, and, I doubt not, even extensive ones exist to a degree not generally suspected. From feelings and motives of delicacy, timidity, or hopelessness of cure, the sufferers prefer to carefully conceal their condition, and bear in silence the numerous evils thus entailed. It may be truly asserted, that the successful management and cure of these accidents, constitutes one of the most brilliant and important triumphs of either ancient or modern surgery. It may be added—and without fear of successful contradiction—that in no department of science or art, has the onward march to success been more rapid and wonderful than in the field of operative surgery. Is there a true physician, imbued with the proper spirit of his professional calling, that can fail to be deeply interested in tracing the onward progress and glorious solution of any of the great medical or surgical problems of the day and times, through all the various stages; from the pre-supposed idea to the experiment, and finally, to the established fact? The more closely we scrutinize these studies, in the same ratio will our faith be increased and established in this noble calling; and surgical dogmatism moderated.

One possessed of a sound surgical turn of mind is, and should be, exceedingly cautious not to assert impossibilities; and the experience of the past quarter of a century, proves most significantly this observation.

We will now proceed to consider, first, the

HISTORY OF PERINEORRHAPHY.

LACERATIONS OF THE PERINEUM were recognized and noted by the ancients, possibly prior to, or at least from the time of Celsus. The only known means of cure then was that of securing the limbs together, with perfect rest, and which is termed the *expectant treatment*. Ambrose Pare, who was cotemporaneous with, and followed Celsus, first *recommended the suture*;

likewise did Mauriceau; but we are not possessed of any evidence to prove conclusively, that either of these gentlemen had ever practically employed them. The first operation ever made, and on record, is that of Guillemeau, noted in his work on "Surgery," page 354, chapter viii, and published early in the seventeenth century, over two hundred years ago.

He states, "the rent in this instance occurred in a former labor, and was of a severe and aggravated nature, involving the sphincter and entire perineum; thus both passages were as one." This case, then, according to tradition, must have inspired all future operators. The operation, as he performed it, consisted in paring the torn edges alike, not cutting much of the deeper structures, as is now done in similar cases, but simply integument and fascia. A needle was then passed through the margins of the freshened parts, and a thread wrapped snugly over the projecting ends, and by this means the parts were drawn and kept in apposition. This form may be termed the hare lip suture. After this he introduced several interrupted and more superficial sutures, all of which were allowed to remain for a period of fifteen days, when the case was pronounced a cure.

Guillemeau being a pupil of Pare's, it is probable he received from his tutor, or master, the hints which he reduced to practice in this case. The writings of Busch and Moser contains a valuable and excellent chapter, embracing the methods and plans of various authors and operators. Many distinguished names are found among those, who advocate *position alone*, and it is asserted by them, that complete rupture—and this includes the recto-vaginal septum—heals thus, without any surgical means.

De La Motte, in 1771, does not, however, seem to repose much faith in such assertions. He states the fact of having met with one failure at least among the class thus managed.

Delcurye, "Traité d'Accouchéméns," page 320, states that he agrees with the authors of the expectant, or let alone treatment, in some degree only, and thus states, "large ruptures can be cured without any sutures." About the same is stated by Puzos, "Traité d'Accouchéméns," page 134, wherein he states: "These

wounds can be cured as well by approximation and securing the thighs as by sutures." Aitken, in his "Principles of Midwifery," 1788, rejects sutures entirely.

D'Outrepont claims, that extensive lacerations heal spontaneously by position; and this is also the opinion of Busch and Moser. In addition to these authorities may be named Paletta, "Exercitationes, Pathologicæ, pars 2d Mediolani;" 1826. Gardieu, in his "Traité Complète d'Accouchemens," tom III. Sedillot, in the "Recueil Periodique de la Société Médicale de Paris," tom IV. Boyer and M. Duparcque, the latter being the author of an essay published in Paris, in 1836, entitled, "Histoire Complète des Ruptures, et des Dechirures de l'Uterus, du Vagin, et du Périnée." To these we will also add the name of Dr. Waller, who declares he has seen ruptures involving the entire perineum, and leaving both cavities as one, get well, and the control over the intestinal canal and contents become restored; no treatment, but only position and cleanliness having been observed. He goes still further, and adds, "Most cases which have come under my observation have done well." We may here be allowed to make the remark: It would have been much more satisfactory had the last-named doctor defined what he really meant by the vague term, "*done well*."

Blundell and Davis, also Ramsbotham, furnish much the same kind of testimony. Notwithstanding, such an injury to the perineum as just stated, *we confidently* believe, can *never do well* when thus treated. Dr. Cockle, in his paper on "Laceration of the Perineum," published in 1853, and as quoted by I. Baker Brown, advises against sutures, especially in recent cases.

It is to be presumed that the foregoing opinions are meant to apply to recent cases, as no mention is made of chronic or long-standing cases. The latter class do not seem to have been considered nor provided for.

It is but fair, since we have reviewed the opinions and experience of those who advocate the expectant, or let alone treatment, that we should here also enumerate the principal portion of the prominent and distinguished names who are advocates of the *suture* and *paring* treatment. These will be found to be both numerous and highly respectable, aye, honorable. Early

in the field may be found the names of Moreau and Smellie, neither of whom, says Busch, ever performed, though they sanctioned and advocated the operation.

De La Motte, Morlanne, Saucerotte, Trainel, Alcock and Bond, Mayo, of London, Campbell, Osiander, Williams, Fabrice, Ritgen, Meissner, Langenbeck, Royer, Häfer, Mercogliano, D'Outrepont, Dupuytren, Rauley, Roux, Noel and Dieffenbach; all of these record successful results by aid of the *knife* and *suture*. Roux, about 1831, obtained the most brilliant results from the operation, and no doubt its probable elevation to the position of an established surgical procedure. He furthermore asserts, there never was a satisfactory result obtained when left to nature. Roux's method embraced the use of the quilled suture, aided by interrupted stitches in the approximating and securing of the edges, when the case was of recent occurrence. The last-named, or interrupted stitches, were placed at intermediate points between the sutures. In chronic, or long-standing cases, in addition, and prior to the use of the sutures and stitches, the parts were first properly prepared by the paring and vivifying process, together with lateral incisions, when the strain on the suture was sufficient to warrant their being made. Duparcque also states, "No union in a proper sense can occur unaided." Chelius is among the number who advocates the use of the *suture*; also Wutzer, M. Verhaeghe and Kilian. Velpeau recommends the suture and Dieffenbach's lateral incisions. Chelius, in his work, Vol. II, page 38, while he favors an operation, thinks the consequences are very uncertain; and on page 39 of same volume, the editor, Mr. South, records a successful issue in an operation made by Dr. Davidson; extracted from the pages of the *London Lancet*, 1838-39, Vol. II. In this instance the quilled sutures were used, and with a view to counteract the tendency to eversion of the edges, the gum cylinders were drawn tighter and closer together, by means of a piece of tape. In order to counteract this defect, Roux inserted a few interrupted and superficial sutures, as before intimated.

In Burns' edition of "The Principles of Midwifery," Vol. I, page 58, 1820, the *sutures* are strongly recommended, when

union cannot be effected by any other means, and yet the American editor, Prof. James, in a foot note on the subject, and embodied on the same page, states, "the sutures should rarely be had recourse to, as they give rise to great irritation." I. Baker Brown states *incorrectly*, that "Burns makes no mention of the accident."

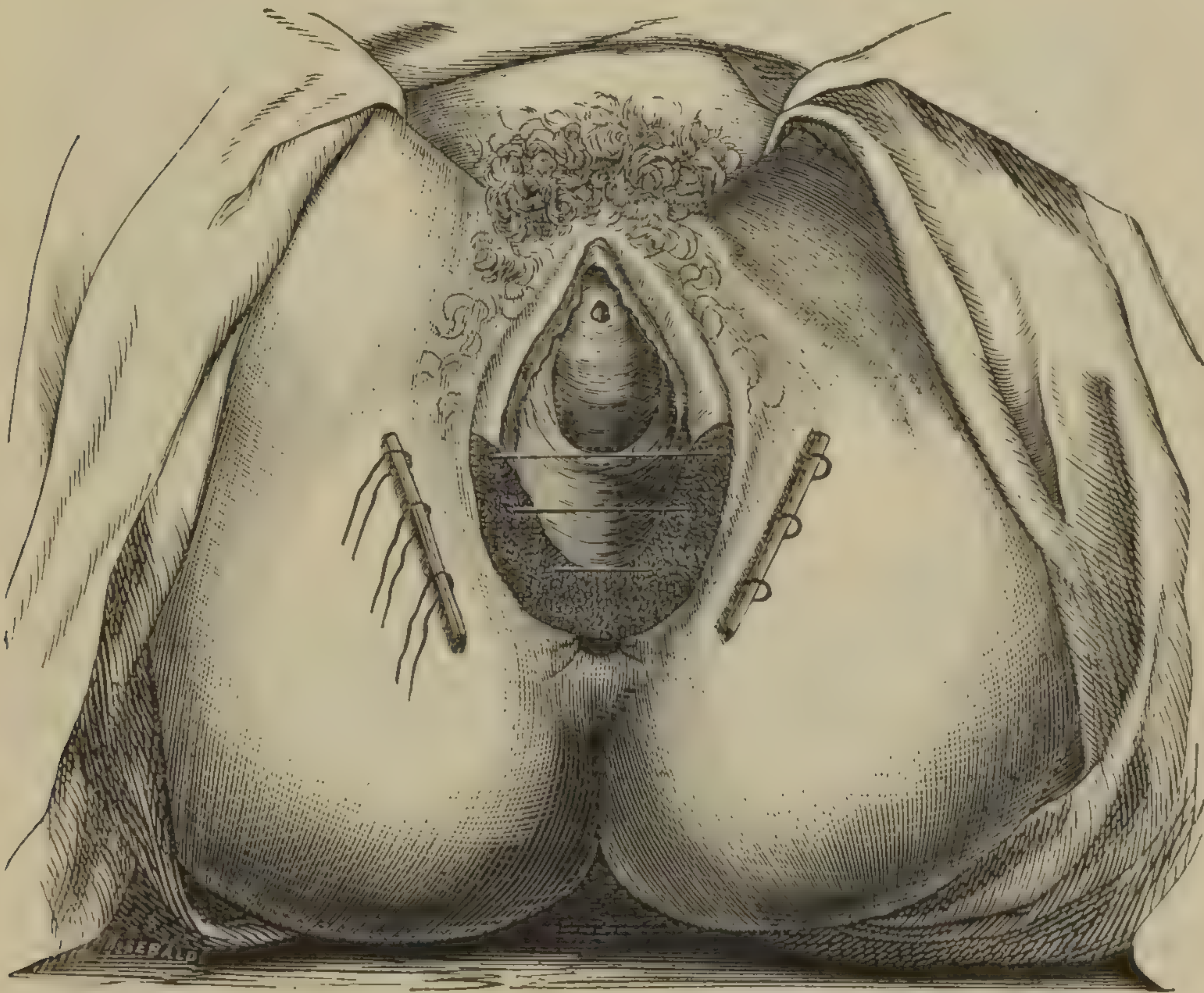
In 1829, Dieffenbach gave deep thought and much attention to *rupture of the perineum*; and after a thorough and matured contemplation of the entire subject, concluded that "these accidents should not be left solely to nature." The substance of his remarks, and conclusions arrived at, may be summed up briefly as follows: "*Immediate operation*:" the use of the twisted and interrupted sutures. "*Secondary operation*:" the edges being previously well pared, semi-lunar incisions on either side, when the approximation makes much strain on the sutures. "*Transplantation*:" in cases attended with great loss of substance. Opium in sufficient amount to keep the bowels bound for several days; also the removal of the urine by the use of the catheter, as the occasion may require. M. Montain made a successful operation, in a case thirty-six days after delivery; and others have succeeded after the elapse of a much longer period of time.

Nevermann, in a German translation of Duparcque, having noticed that stone-masons receiving lime into the eye, in twenty-four hours had the lids and eye-ball adherent, from this circumstance concludes and suggests, that the margin of a laceration should be subjected to a similar treatment, viz., by applying quicklime to the parts, and then securing the limbs together. 'Tis almost needless to add, such an unscientific proposition and process as this, could never be popular nor successful. Langenbeck, renowned for his ingenuity, presented a method, which he terms *perineo synthesis*, a description of which will be found in a "Memoir sur un nouveau procédé opératoire pour le Guérison des Ruptures. Complètes du Périnée. Bruxelles, 1852, by M. Verhaeghe, of Ostend. This monograph is not in my possession, nor can a copy of it be obtained.

The following points embraced in the essay are gathered from the able treatise of I. Baker Brown, on "Rupture of the Perin-

eum." The first stage in the operation consisted in freshening the edges, or free borders, or the recto-vaginal septum, then splitting the septum, the anterior layer of which is designed after the laceration is united to be brought down and stitched by its angles to the front part of the newly joined perineum, thus protecting the parts against the vaginal discharges. After

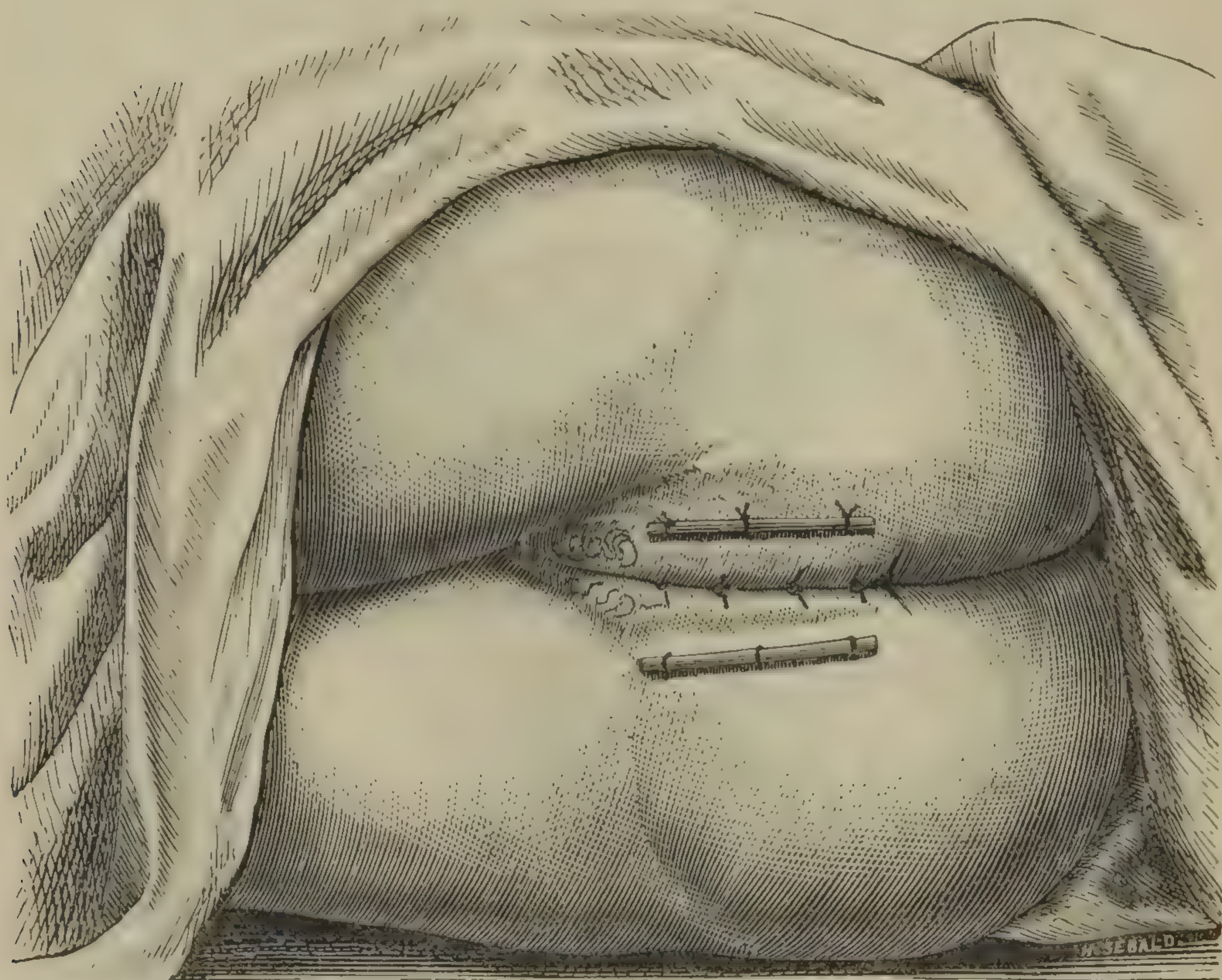
Fig. 1.



this, the edges of the laceration are then pared, extending forward to the posterior commissure of the vulva, avoiding the mucous membrane of the vagina. The following is the method of the approximation, after the paring process is completed: After the bleeding has ceased, and every particle of intervening clot or string of coagulum has been removed, the rectum is first closed by suture, inserted by means of Wutzer's curved needles; after which the perineum is then approximated by means of interrupted sutures, known as the twisted variety. Finally, the anterior portion of the septum is closed in like manner. To

overcome any unusual tension, he resorts to the lateral curved incisions, suggested and adopted by Dieffenbach. The limbs

Fig. 2.



being approximated and secured in the usual manner, the after treatment may consist of vaginal injections of infusion of chamomile, catheterism, low diet, etc. The bowels may be kept in a state of quiescence, by means of internal administration of opium, until after the sutures have been removed.

Bernard and Huettes' "Operative Surgery," page 454, recommends position, if the case be a recent one. If old or deferred, revivifying the edges, then uniting them by means of the quilled suture, the same as that used by Roux, and also Dieffenbach's lateral incisions, if required. They add, "the sutures should be permitted to remain until cicatrization is complete, union by first intention not being expected," we might add, exceptionally realized.

Guerin, "Chirurgie Opératoire," page 578, approves and advises Roux's operation, with Dieffenbach's incisions.

Sédillot, Vol. II, page 441, recommends the last described method.

Vidal, "Pathologie Externe," tome 5, page 755, also speaks favorably of Roux's and Dieffenbach's methods; and also does Dugéré, "Des Dechirures du Périnée," 1856.

Dr. C. Clay, referring to the subject, in 1856, advises quilled sutures; use of catheter for a period of twelve to fifteen days; rest and cleanliness. He adds, the sutures should be removed on the seventh day.

Miller, in his practice of surgery, regards the subject very briefly, and is rather adverse to the operation, in recent cases, regarding the use of sutures as improper. Skey, on operative surgery, 1858, does not seem to regard the question with any amount of favor, and recommends the operation of I. Baker Brown.

M. Jobert, "De la Reunion en Chirurgie," 1864, advocates a method of suture which he terms *serpentine*, which is made of silk thread, inserted with curved needles. His description is not concise nor clear.

Sir J. Y. Simpson, in his able work on "Obstetrics and Gynæcology," edited by J. Watt Black, A.M., M.D., American edition, 1871, page 65, mentions three varieties of ruptured perineum, viz., *longitudinal*, *oblique* and *central*. In the slight forms, or partial ruptures, he recommends approximation of the limbs, cleanliness and quiet. In the more severe and complete forms, he directs that the patient be placed so that the discharges, etc., do not run into the wound; the use of metallic sutures, attention to the bladder by use of the catheter, and opiates to control the bowels. Should these means fail, he then recommends revivification and sutures. The following is a method he advises, in order to prevent central perineal laceration, pages 594 and 595. *First*, "manual support of the perineum, so as to save excess of pressure upon it, while at the same time we push the child's head forward to the vaginal opening, a means, which in the practice of Denman and Lachapelle succeeded in preventing it from passing through the perineum, after its central structures were split and burst."

Second.—"Delivery of the head and its proper guidance

through the vulva by the forceps, as has been effected by D' Outrepont, Hüter and Braun, in cases in which this accident was impending."

Third.—"Lateral incisions, if absolutely necessary, of the interior edge of the perineum—for in this, as in the more common longitudinal forms of ruptured perineum, it is necessary, I believe, better practice, to make one or two slight cuts on either side of the fourchette, so as to regulate the site and direction of the laceration that must occur, rather than leave their form and their character to mere chance alone. It is always a more infinitely important matter to save the sphincter of the anus than the sphincter of the vagina."

There is one name among British surgeons more prominently associated than any other with this specialty, viz., I. Baker Brown, whose name we have mentioned on several occasions in the course of our remarks. His experience in rupture of the perineum has undoubtedly been far greater and more prominent than any other authority of late years. From 1853 to the present time, his cases have accumulated, until they now number, according to the last edition of his work, published in 1866, one hundred and twelve cases; one hundred and four of which were successful. We may, then, add, so complete has the operation of perineorrhaphy been vindicated, that there is scarcely a treatise of surgery published now-a-days that fails to contain a chapter on this subject. Of late years great strides have been made in this operation by Verneuil, Langier, Demarque, in France; Langenbeck, Simon, of Germany; Sims, Emmet, Bozeman, Agnew, Thompson, Thomas, of the United States. Towering above all those just named, or any that has preceded him, is the name of I. Baker Brown, of England; and probably no one before him, in the list of those known, or ever reported, equalled that of M. Roux, of Paris, France, in point of numbers and successes of his operations of *perineorrhaphy*. The precise number of his cases are not on record, as far as I have been able to learn; but it is generally admitted by those who are familiar with the history of this surgical procedure of those times, that Roux's fame and skill exceeded that of any other surgeon in this special department.

One of the leading features of Brown's operation is, extensive paring and denudation of the implicated parts. He also uses the quilled and interrupted sutures, dividing the sphincters on each side, and keeping the bowels quiet with opium.

In concluding this portion of our essay, we will take occasion to add, that very little attention has been given to this subject by the old American surgeons and writers. Dorsey, Warren, McClellan, Gibson, Mütter, who were cotemporaneous with most of those just mentioned, make no allusion whatever to the condition nor the operation. The most prominent mention, and as far as my knowledge extends, the first operation made in our own country, is one reported in Churchill's "System of Midwifery," 1853, and transcribed from the "American Journal of the Medical Sciences," October, 1850. This operation was made by Dr. Wm. H. Horner, Professor of Anatomy in the University of Pennsylvania. The rupture occurred in a primipara case of a young married lady. It was not until after the birth of her second child that the case came under the observation of Dr. Horner. The laceration extended from vulva to anus; the parts were cicatrized over an inch in depth, and but one fissure was apparent from near the os coccyx to the clitoris. The patient had suffered very much from frequent diarrhœas, only to be restrained by opiates, constantly used. Her life was unavoidably passed in seclusion from society; much of the fæces passed forward through the rim of the vulva, which added much to her distress. He pared each perineal margin of the cicatrix, also the rectal and vaginal edges of the rupture; used interrupted sutures, along the rectal and vaginal margins, the sphincter ani muscles being divided on each side of the anus; a procedure which the doctor then deemed necessary in old cases of this kind. Unfortunately, the menstrual flow came on prematurely, and with the natural discharges of the vagina, loosened everything up in the way of adhesions. This operation was a failure. Fifteen months subsequently a second operation was made. Additional difficulties had now to be met. Owing to a loss of material, and a consequent increase in the width of the rupture, he selected another method of overcoming the trouble. Two flaps were taken from the

perineum and adjoining parts of the vulva, one on either side. By placing the base of the right flap below, and the base of the left flap above, upon crossing the two flaps, a partition was formed between the rectum and vulva; the free side of the right flap forming the upper part of the rectum, and the free side of the left the lower part of the vagina. Interrupted sutures were again used. This operation was only a partial success, but the patient's condition was considerably improved. For full particulars see Churchill, pages 467 and 468. Edition of 1853.

Among those of the modern school of American surgeons, who all, more or less, have had some experience in this department of surgery, and who also refer to the subject in their respective works on surgery, may be mentioned as follows: Sims, Gross, Smith, Agnew, Hamilton, Helmuth, Franklin, Thomas, all of whom describe and advocate the operation. In the "American Journal of Medical Science," Vol. XIII, page 113, 1833, may be found a remarkable and successful case, reported by Dr. Mettaurer, of Virginia, in which the rent extended three inches up into the rectum. After revivifying the edges, he closed the rupture by means of leaden wire sutures. These were introduced and the parts were approximated by twisting their ends. Prof. Gross adopts, and agrees with the plan of I. Baker Brown's method of operating, excepting in one particular, viz.: the dividing of the sphincter muscle. He states, "I have never found it necessary." A case operated on by Dr. Lewis, is reported in the "New York Medical Journal," 1865, in which sutures were used, and stitches were taken very deep. In this instance the sphincter muscle was not divided; the result proved a success.

In the "Columbia Hospital Reports for Women," 1873; Lying-in ward, and presided over by J. Harry Thompson, A.M., M.D.; up to this date, 34 successful cases are reported by him.

Next in order we will consider briefly the causes that operate in producing this sad disaster.

The tabulated reports from the various American and European hospitals, do not furnish any data from which to form an estimate or even judge of the relative frequency with which this accident occurs, to the entire number of women confined and

delivered. This silence may be due to a neglect to examine properly the parts after delivery, or from intention to keep silence, from the mistaken notion that a ruptured perineum necessarily reflects discredit upon the attending accoucheur.

It certainly is by no means an uncommon accident, and occurs in both private practice and in public institutions, and under the care of accomplished obstetricians.

Its frequency may be accounted for in a measure, when we consider the various causes, either combinedly or singly, that may produce the lesion. I. Baker Brown suggests *four* principal causes.

1. The dimension of the child's head being too large, absolutely and relatively, for the capaciousness and expansibility of the maternal outlet.

2. An unnatural rigidity of the perineal tissue, or extreme width of the same.

3. Unskilful use of instruments.

4. Parturition for the first time at a very early or late age.

Churchill gives thirteen causes:

1. Sacrum too perpendicular.

2. Arch of the pubes too acute.

3. Thickened state of urethra and adjacent parts (infiltrated probably).

4. Too rapid passage of the child's head.

5. Exostosis in any part of the pelvic cavity.

6. Excessive breadth of the perineum.

7. Rigidity of the perineum.

8. Tissues of the perineum weakened by disease.

9. Occlusion of the lower outlet of the hymen.

10. Malposition of child's head.

11. Malpresentation.

12. Exercise of too much force by the patient.

13. Want of care when instruments are used.

Tyler Smith only alludes to one, corresponding to the 7th of Churchill, viz.: Rigidity of the perineum.

Thomas gives four causes, viz.: Parturition, forceps, manual delivery, craniotomy.

Hewitt simply refers to difficult labor.

Thompson, five causes :

1. Violent expulsive force by the patient.
2. Unusual width of child's shoulders in proportion to the size of child's head.
3. Excessive width of perineum.
4. Inelasticity of the perineum, occasioned by fatty degeneration of its tissues.
5. Unskillful use of the forceps. (The fourth cause occurs most frequently after 30 years of age.)

Agnew states as to *causes*, "these may be arranged under *three heads*."

1. Such as relate to the mother.
2. To the child ; and
3. To instruments.

Under the first heading may be included powerful expulsive uterine contractions, forcing forwards the fœtus before the maternal parts are sufficiently dilated ; or to an unyielding rigid perineum, the tissues having undergone some structural change, possibly fatty degeneration ; or where the muscular structure is lacking in tone and unequal to cope or react against the great pressure of the advancing fœtal head ; also where the uterine contractions are suspended, and at a period when the perineum is put upon tension, and then without premonitory warning, recommences with unusual force and power. Under any one, or a combination of several of these conditions, laceration may occur in one of two modes: either by the muscles contracting powerfully, or else by their being much enfeebled by protracted extension, as to be unable to assist, the parts becoming then ruptured. The form and proportions of the perineum should be noted. There are congenital departures and peculiarities which, when present, serve to complicate the mechanism of labor. These may be due to a redundancy of tissue, associated with an unusually straight sacrum ; in consequence of which the presenting part of the fœtus tends to direct protrusion, instead of the usual manner in being deflected in the axis of what otherwise should be a normal pelvis with proper curves or straits. An abnormally narrow arch may predispose to the accident, by preventing the usual extension.

Under the *second* head, or such as relate to the child, may be mentioned unusual size of the head or breadth of the shoulders, either from natural or morbid causes, demanding extraordinary dilatation of the vaginal outlet; or an abnormal position of the fœtus. It is a mooted question, by no means clear, as yet, whether the passage of the shoulders does not often produce the damage ascribed to the head.

The third heading embraces lacerations from the unskilful use of instruments, and these come in for a full share of blame, in many cases. When judiciously and carefully used, they seldom, if ever, cause any such trouble. If a child is dragged through the maternal passage without regard to the pelvic straits, or curve, on the plan of a lever, damage will almost inevitably result; or if the accoucheur, before he has the blades of the forceps properly placed and adjusted, permits himself to be surprised by the sudden expulsion of the child's head, together with the instruments, the result to the parts may be very disastrous to the patient, and no doubt humiliating and damaging to the attending physician.

Various are the degrees of rupture of the perineum. *First.* When the laceration extends from the posterior fourchette or commissure of the vagina toward, but not into the perineal body. *Second.* Where the laceration extends from the posterior commissure of the vagina to the verge of the anus, but only involves the integument and subcutaneous cellular tissue. *Third.* When the laceration extends from the fourchette to the rectum, dividing the integument, fascia, sphincter vagina and sphincter ani externus; and in some cases involving the recto-vaginal septum, including the sphincter ani internus. *Fourth.* In rare cases, when the head is forced through the perineal body, or triangle, leaving the sphincter ani and vagina unsevered, the point of exit being through the integument midway between the two muscles.

The discomforts arising from the first and second class, or *partial ruptures*, are by no means trivial; still are more remote and tolerable than those that accompany and follow the more complete forms. In time the consequences of these two forms will become aggravated, to say nothing of the liability of an increase

of the rupture, at each period of delivery succeeding the first mishap. When rupture of the perineal body and integument only occur, there is always prolapsus more or less of the uterus singly.

When there is complete rupture, involving the vaginal and rectal sphincters, and especially when the internal sphincter ani and recto-vaginal septum are included in the laceration, there *always exists prolapsus of uterus, bladder, rectum, and vagina* as instanced in case VI of our report. Incontinence of urine and of fœces exist, and rectal gases escape; strangury and marked physical prostration are present, together with concomitant conditions and symptoms to such an extent as to render the patient's life unbearable to herself and an object of loathing and disgust alike to both family and friends. In addition to this there is imposed upon the patient a seclusion of life from all its enjoyments, worse than death itself. To rescue a human life from so terrible and life-long an ordeal, as this condition entails, deservedly ranks among the noblest achievements of modern surgery. It not only exchanges misery and suffering indescribable for a life of comfort and ease, but it also reflects to the honor and credit of the surgeon; who goes on his way rejoicing in the happy consciousness of having been the humble instrument, in the hands of an all-seeing *God*, of performing an act pleasing to Him, and to his fellow man. Truly has it been said, "these are the threads of gold which run through the complex mechanism of professional effort and toil, and inspire the heart (and we add, enliven the soul) amid so much calculated to weary and depress."

The consequences, then, of all forms and degrees of lacerated perineum, varying only in degree and severity according to its extent, may be enumerated as follows: 1. Prolapsus uteri. 2. Prolapsus of the vaginal walls and uterus, with more or less subinvolution of both. 3. Prolapsus of vagina, with rectocele and cystocele. 4. Prolapsus recti, with incontinence of fœces and faecal gases, together with incontinence of urine..

The following classification, to our mind, is the most feasible, concise, and as comprehensive as any. The *varieties of perineal rupture* may be classed under two distinct heads, viz.: *partial*

and *complete rupture*. The following includes and embraces the stages of destruction.

1. *Superficial* laceration of the posterior fourchette and perineum, in which the sphincters are not involved.

2. *Deep* ruptures, moving the superficial structures and sphincters vagina, perineal triangle or body too, but not involving the sphincter ani.

3. Rupture through all the last-named, involving and including the sphincter ani.

4. *Complete laceration* of all the foregoing structures involving the internal sphincter ani and recto-vaginal septum, to a greater or less degree. I do not regard anything *short* of this fourth variety as truly *complete*.

The first three named, and referred to as *consequences*, may result from both forms of rupture, while the last named, the fourth, attends chiefly the form of *complete laceration*.

Prominent among the causes that operate to produce rupture of the perineum, we will mention, in the order of their importance and frequency :

1. Instrumental delivery. 2. Manual delivery. 3. Parturition. 4. Craniotomy. 5. Extirpation and removal of large tumors. 6. Injuries from fall or severe blows.

Subinvolution is not regarded by authors generally as a consequence of this disaster. I have noted but *one* author who mentioned it, viz., T. Gaillard Thomas, M.D. I have witnessed this condition in three instances out of the number embraced in this report. According to Savage, the muscular walls of the vagina are not separable into coats or layers. Two-thirds of the thickness of the vagina, varying from two to three lines above, to five or six below, is made up of this muscular portion; the inner third consists of a dense, cellular lining membrane, inseparably united to it. The contractile elastic elements or structures of this passage then, are identical in structure with those of the uterus while under the process of gestation. A *retrograde metamorphosis* likewise influences them subsequent to parturition. This process is not unfrequently interrupted in the uterus in consequence of rupture of the cervix; it is then fair to presume, that the same condition or change may accom-

pany or follow rupture of the perineum in the vaginal walls. Nor is this justly and only attributable to instrumental delivery, which may produce both these conditions. A close and careful examination into these cases will prove our assertion to be correct, and that the result herein alluded to has often occurred in labors that have been rapid and unaided. Again, it may be urged that prolapse of the vagina, when a consequence of rupture, excites excessive growths in its walls; but the two states co-exist when perineal laceration has not occurred in vaginal prolapse quite as frequently as when it has.

Prevention. It has been truly and often remarked, that "*an ounce of prevention is worth a pound of cure*," and we will add, that there is not a more striking application of the axiom than in the question here at issue.

Every writer on obstetrics devotes a passage in his work to the process of labor and the support of the perineum. This is a very natural and commendable feature, but there appears to be much discrepancy of opinion as to the manner of performing this manipulation. There are not a few who deny entirely the necessity of such a precaution. Prominent among the Germans who do, are Sarcombe, Wiegand, Faust among the senior class; and V. Siebold Mende; the former takes occasion to controvert and refute these views at some length; the latter declares that Nature provides all remedies against its injury.

In France Pinel Grand-champ and Danyan express themselves opposed to *support*, asserting it to be positively injurious. Thompson, of England, 1824, expresses the same opinion. Late in the fourteenth century, Eros, or Trotula, in the twentieth chapter of his book, page 50, 1597, argues in favor of support. In Germany, Roder and Stein virtually agree with him, and advise the insertion of two fingers into the rectum, with the view to guide the foetal head in the proper direction.

Schaffler, 1802, recommends one hand placed upon the sacrum and drawn, while pressing softly the perineum, in order to gain more skin for the latter, at the same time with the palm of the hand to press the head in an upper direction, thus easing the downward pressure.

Wiegand also advises rubbing the skin upward from the

thighs toward the genitals. Manipulations like these can be of no use.

Stark, sen. and jun., and Nedel counsel proper support, with the hand; also Niemeyer, who advises leaving one inch of the perineum back of the posterior commissure free, while pressure be made in the axis of the inferior strait of the pelvis. Barlow advises support until the perineum is well distended, then, he says, it will provide for itself. Nedel only places his thumb across the fourchette. Magdeberg, 1806, appears to simply provide support at the point where the rent begins.

Hohl advises a peculiar method, viz., the placing of four fingers on the foetal head, close to the posterior commissure, and the thumb on the opposite side of the head, near the arch of the pubes, thus both restraining and guiding the delivery. Little, if any, support is furnished by this plan, but its chief value, if any, is in preventing too sudden expulsion of the child before the parts are properly prepared. Heine and Müller advise the side position to prevent laceration.

English authorities, such as Denman, retard the head partly by pressure made directly against, and partly by the hand planted or pressed upon the perineum. The object being to detain the head until the parts are ready for its passage.

Burn's mode is uniform pressure applied over the *entire* perineum, until the head passes; and particularly to the posterior commissure, charging the patient not to bear down during the presence of pain. Mr. B. evidently did not properly comprehend nor understand the mechanism of the parts, nor yet the principle of labor, when he gave such advice.

Busch advises the fingers being planted against the child's head, to prevent its being forced out too suddenly; and when not likely to occur to support the parts by placing the ball of the hand on the posterior commissure, the palm on the perineum, the fingers alongside of the anus; supporting *only* during the presence of a pain, and *never* to strongly oppose the advance of the foetus. During the exit of the head and retraction of the perineum, the supporting hand should follow the head carefully. He is unfavorable to using the uncovered hand.

Hamilton uses the hand to such part as sustains the greatest

pressure. During intervals of pain he rubs the perineum with lard; when the head is emerging, lays the fingers against the posterior parts of the vulva, then presses the perineum toward the pubes.

Carus states, that it is only necessary to give the posterior commissure sufficient background by pressure. He no doubt had the old maxim in his mind, "*obsta principiis.*"

Siebold, during the intervals between the pains, only rubs the skin of the thighs toward the perineum, and during pains gives very gentle support. He does not agree with Busch, who insists upon uniform pressure.

Pinel Grand-champ says: Support is not only *useless*, but *injurious*. Mendé, of Göttingen, published the same opinion.

Messnard thought it only necessary to hold the coccyx backward, or to place two fingers between the head and perineum.

Hodge, of Philadelphia, Pa., enforces pressure, especially at the posterior commissure.

Meigs and Dewees advises the same, using a napkin supported by the hand.

Ramsbotham, of England, uses a napkin as a matter of delicacy, maintained against the perineum with the hand.

Velpeau uses a napkin, but places the hand transversely, the cubital edge toward the coccyx.

Cazeaux employs the hand alone. A few remarks at this stage of the question would not be remiss, touching upon the great and abnormal size of the foetal head, or some peculiarity of the perineum that may produce laceration.

Michaelis recommends in such instances incisions in the perineum.

Siebold, in discussing this feature, insists the incisions should be made where there is least pressure or tension.

Ritgen endorses a similar view, but likewise confesses such a repugnance to it in civil practice, that he declined to do it;—nor yet has he performed it in hospital service.

Blundell simply recommends, and practices only slight incisions made laterally, during a pain.

M. Paul Dubois also advises oblique incisions.

Chailly Honoré concurs in the same method, believing that

even should the incision become a laceration, its course would be such as to incur the disastrous consequences which usually ensue in a laceration into the raphe.

Simpson, of Edinburg, also advocates this practice.

Penrose, Professor of Obstetrics in the University of Pennsylvania, teaches the propriety of incisions in cases of extreme nature.

E. Wilson, of Philadelphia, Pa., a teacher of obstetrics in the Nurses' Home, opposes the practice as unnecessary.

Dr. Wallace, Professor of Obstetrics, Jefferson Medical College, Philadelphia, Pa., thinks the necessity for such a remedy can scarcely occur.

D'Outrepont, objects upon the ground that the cut once made may soon be converted into a rent, extending even to the anus.

Busch thinks the incisions should be confined to cases of organic anomalies only.

In conclusion, on this point, we will add, that cases demanding such a measure are rare; the greatest danger of inculcating the theory is, that it is likely to be abused by practitioners of limited experience becoming unnecessarily alarmed, and then prematurely resorting to the knife. The wiser plan, in our judgment, of avoiding this accident, is by preventing it by a judicious and timely use of the forceps; a practice that will, we think, commend itself to most intelligent practitioners.

Careful use of ether or chloroform will contribute to the preservation of the perineal structures; and with the action of the parts will serve to relax them, by rendering the patient somewhat insensible to acute sufferings; which seems to be the cause that provokes violent and sudden contractions of the perineal muscles. We do not propose to ignore a proper support to the perineum as a precautionary measure, and made by the *bare hand*, as it communicates to the mind valuable information which could never well be received through any interposing substances, as a napkin, for instance; nor should the support be applied too soon or before the foetal head is engaged in the lower strait and is pressing out the perineal structures. The pressure should be properly graduated and

applied, according to the demands of the case; likewise exerted *only during a pain* and in the proper *direction*, so as to prolong the natural curve, which, of course, should correspond with the axis of the straits. The palm of the hand should be applied against the perineum, the balls of the thumb and little finger resting in front of the anus, and the fingers upon the posterior fourchette of the vulva. The hand thus adjusted, the pressure should be at first somewhat firm posteriorly, and thus deflect the head toward the pubic arch, during the exit, well and securely applied to the posterior margin of the vulva.

A careful observance of these last named rules, we think, will be found the safest and most efficient method yet recommended.

PERIOD OF OPERATION.

We propose to divide the operation for the cure of lacerated perineum into what may be termed *Primary* and *Secondary*.

By *primary* is understood the early employment of the suture at the time or while the surfaces of the laceration are still raw; and the earlier they are used the better for both patient and physician. Attempts should be made even when the parts are œdematous, tumefied, inflamed; and when in addition there are threatenings in form of suppuration, sloughing, or gangrene; it is better to give the patient the benefit of the doubt. By some it is thought best to avoid sutures, but for my own part I do not see any just reason why operative efforts at restoration should not be made, and especially when silver wire sutures are used, as they are much less likely to induce suppuration than any other kind.

Should even only a few points of adhesion be secured, it is a positive gain; the remainder may granulate up and thus close in. Those who object to primary or immediate operation, allege as a reason that: 1. There is danger of vaginitis or metritis. 2. The lochial discharges diffusing themselves over the parts prevent healing. 3. Cases make a good recovery when proper position is maintained and the process left to nature.

As regards the first objection, this is simply imaginary, for as already intimated, silver sutures, when used, cause less irri-

tation than when the part is left to itself, because the raw surfaces are protected by being maintained in apposition; there is consequently much less suppuration. For the same reason the second objection can be disposed of; inasmuch as a partial and accurate adjustment precludes in a marked degree any prejudicial effects from the lochial flow. The third and last objection simply rests upon a peradventure, and places the exception before the rule. Nature, when unaided in such straits as these, makes but a sorry and incomplete restoration, in a large majority of cases. This is a well-known fact to operating surgeons. The retraction which the torn muscles necessarily undergo, before and during the slow process of granulations and cicatrizations, diminishes very much the performance and completion of their proper functions; hence the value of the immediate introduction of the sutures.

By the *secondary* is designated any period later, when the knife is required to revivify or freshen the margins of the lacerations; especially after cicatrization has set in.

Presuming secondary operation becomes necessary, the question then arises: when should it be made? As a rule, we should decide, whenever the patient's general health and condition will admit, and the parts are thoroughly healed, sound and free from all inflammatory or suppurative action. It is, in fact, imperative that that should be the case, otherwise the necessary tension brought to bear upon the stitches will not be borne by the tissues. A period of at least three to four months should be allowed to intervene, and if necessary, a year, before a *secondary* operation, in our judgment, would be justifiable.

To undertake an operation during gestation, is another question to be considered.

Most surgeons, until recently, have indulged in the opinion that during this period the attractive forces concentrated within and about the uterus and its associate organs, would most likely defeat the healing process in the perineum, in the event of operation. This view is not sustained by facts.

The operation may therefore be undertaken during the *early* months of pregnancy at least; prior to the third or fourth month. This opinion is endorsed by some very competent

minds ; prominent among the number is I. Baker Brown, who states: "In no instance in which I have operated have there arisen any symptoms threatening miscarriage." Beyond the last named period, there are two reasons, that may be urged why it is improper to undertake an operation. 1. The reflex influences tending to uterine contraction, and thus endangering the safety of the embryo. 2. The period is too brief to secure, for the perineal parts, the requisite physical and vital properties of elasticity and contractility, so as to obviate the risk of a second laceration. The menstrual flow constitutes another contraindicative influence. The third or fourth day after the cessation is the most favorable period under ordinary circumstances. The presence of a catarrhal invasion, accompanied with coughing or sneezing, is also a sufficient barrier to defer any operation; as the antagonism that exists between the diaphragm and perineum, would be the means of greatly disturbing the stitches and dressings. Some authors, among whom may be mentioned M. Roux, opposes operative procedures while the mother is nursing. The same counsel he also offers in cases of vesico-vaginal fistula, under the belief that an additional complication, viz., pyæmia, may supervene. With neither of these views do we coincide; having never learned of nor witnessed any such unpleasant results.

PREPARATION OF THE PATIENT.

The first point to be considered by the surgeon when he assumes the management of a case of this character, is to carefully note the condition of the different organs. Not unfrequently he will observe the patient suffering with diarrhœa; more or less disturbance of the digestive apparatus, together with a train of distressing nervous symptoms. To correct these disorders—rest, composure of both mind and body, a proper selected, regulated and nourishing diet, pure, fresh air, and the application of appropriate remedies, according to the indications present, are required. Not unusually the patient contracts the habit of resorting to the internal administration of opiates or other narcotics, for the two-fold purpose of obtaining rest

and binding the bowels. This should, of course, be done away with, as it soon leads to indigestion, nervousness, headache and other ill effects, and a contrary course be recommended and substituted. The articles of diet best suited to the case, and for the chief reason that they do not create stool, are good strong animal broths, free from fat, containing no seasoning, only a moderate amount of salt; stale bread one day old; milk toast and a moderate amount of vegetable diet, avoiding such articles as produce flatulence; plain pudding, and soft boiled eggs, fresh. These will as a rule effect the desired result and should be given at least for one week or longer prior to the operation. At least forty-eight hours before the operation is attempted, the lower bowel should be thoroughly freed from stool by use of enemas, aided, if necessary, with a dose or two of castor oil. A suppository composed of cacao butter and opium in a small quantity may be passed well up into the rectum; this will materially contribute to keeping the bowels quiet. The patient should take a very moderate meal on the morning of the day set for operation, so that the anæsthetic may not be interfered with. The bed assigned the patient for operation should be a firm hair mattress, over which a sheet of gum cloth should be spread, this in turn covered with a folded sheet. A bright sunny day should be selected, also a morning hour, and thus allow ample latitude for the operation.

OPERATION.

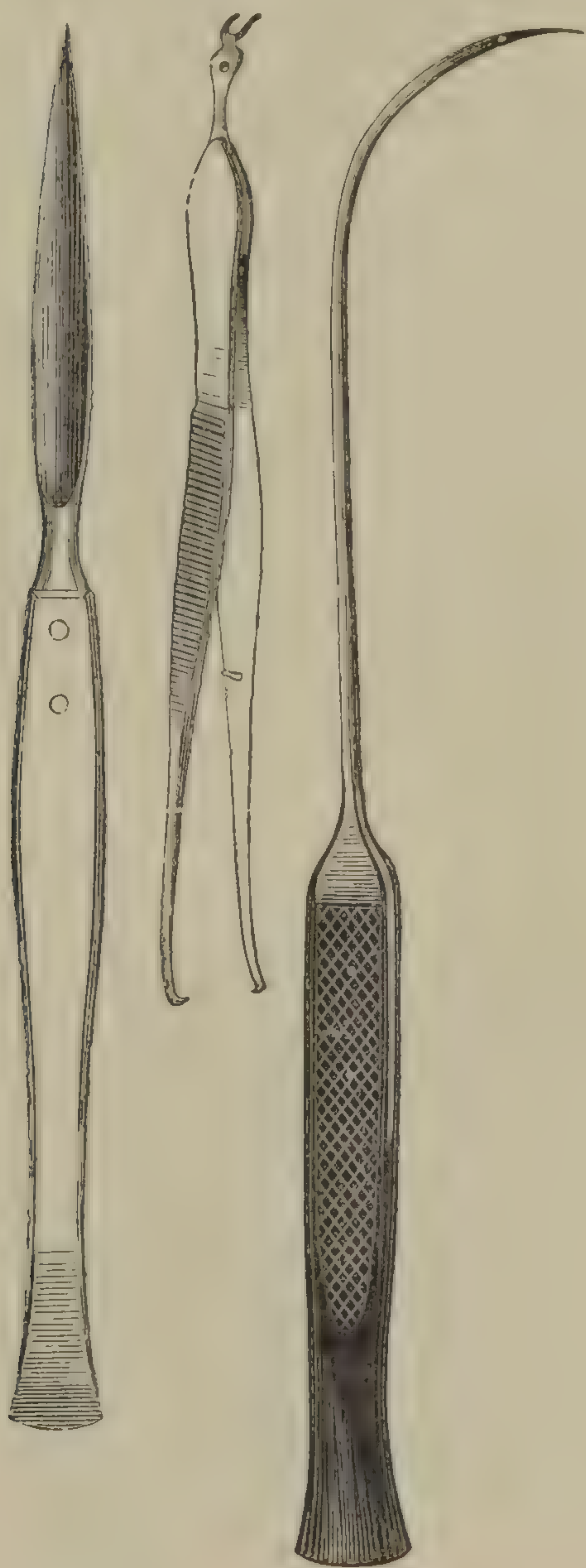
The usual complement of assistants is four, distributed as follows: One to take charge of and to administer the anæsthetic, and to do nothing else but give his whole attention to it. Two to hold in position and support the lower extremities, and the fourth to attend to the sponges, instruments, etc., which are required by the operator. Three different attitudes have been suggested. First on the side, with the nates brought over the side of the couch, with both thighs strongly flexed on the trunk. This is the position recommended by Busch and Moser. They claim for it complete relaxation of the perineal structures, and less risk of the patient taking cold, as there is very little

of the perineum exposed. Second, the kneeling position, with the body well bent forward; the abdomen supported by means of a small feather bed rolled up in a sheet in such manner as to rest and support the abdomen; the body enveloped in a sheet. Third, the dorsal position, the patient reclining on the back, hips projecting over the edge of the bed; the legs flexed upon the thighs and the thighs upon the abdomen; much the same position as when lithotomy is to be performed. The one most suitable and frequently resorted to is the last described, because

Fig. 3.

Fig. 4.

Fig. 5.



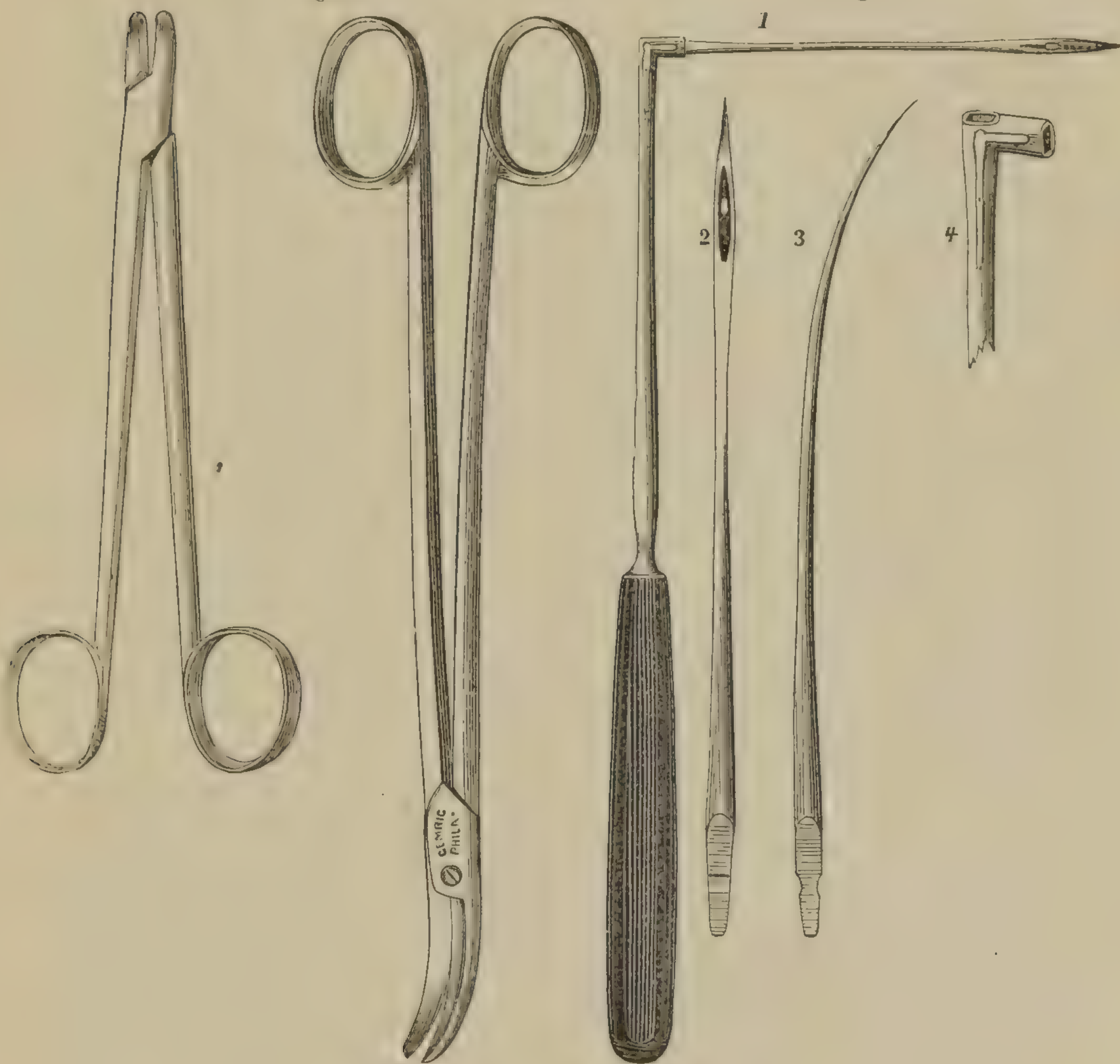
it offers the most complete control in every particular. The following constitute the instruments, which are few and simple: a straight scalpel, sharp-pointed, with long handle (Fig. 3); one pair curved spring rat-tooth forceps, (Fig. 4); compressor, (Fig. 6); suitable curved needles, with a porte aguile (Fig. 7), or needle holder, which will answer for both deep and intermediate sutures; or, a long needle, with a moderate curve, and eye near the point, set in a handle, will do as well (Fig. 5), one tenaculum, one pair artery forceps, sponges, dressings, silver wire, etc.

Sutures. Three different kinds of sutures have been suggested and used, all more or less adapted to this purpose, viz., the *interrupted*, the *twisted*, and the *quilled* suture. Osiander, Dieffenbach and others succeeded with the first named, or interrupted. Duparcque states the successes with this form have

been equal to the failures. Both Alcock and Bayer treated their cases successfully in this manner. The objection to this suture is the lips of the wound is not closed completely by its use, and union is only partial.

Fig. 6.

Fig. 7.



The same objection may be urged against the twisted, although Morlaune and Dieffenbach and others *commend* it. The quilled and interrupted sutures combined seem to be the most successful, and better adapted for the purpose in most cases.

In the event of I. Baker Brown's method of operation being adopted, there may be added a blunt or probe-pointed bistouri, with which to divide the sphincter muscles, with likewise some pieces of cane or elastic bougie, together with silver wire, both

heavy and light sizes, of which to form the quilled sutures. Silver annealed wire is the best material for the purpose.

IMMEDIATE OR PRIMARY OPERATION.

As soon as the accident is discovered, it should be promptly met and the torn parts brought in apposition, then secured with the sutures. I need hardly add, that the advantages of such a course will be apparent, when it is considered that the perineal tissues are flaccid because of the extreme tension to which they have been previously subjected, and consequently there will be little strain upon the sutures. Again, there is a natural tendency of the parts to heal when thus immediately adjusted. It may now be said, this truly is the accepted time. The number of sutures will vary according to the extent of laceration. The method of introducing and securing the sutures will be explained under the head of the secondary method of operation, and also the mode of dressings, with a view to avoid repetition. The parts must be kept perfectly clean, frequently bathed, or sprayed with a warm and weak solution of carbolized water, or permanganate of potash prepared in same manner.

SECONDARY OPERATION.

The patient having been placed in the position described under the third method—lithotomy position—and the parts carefully shaven, the patient being duly and thoroughly anæsthetized, an assistant makes the requisite tension upon the lateral sides of the laceration, while the surgeon pares away at least a quarter of an inch external to the torn edges, and sufficiently deep to reflect inwards the mucous membrane. The edges of the recto-vaginal septum must also be carefully freshened. The next step is the division of the sphincter ani on both sides, about a fourth of an inch in front of its coccygeal attachment. This should be done with the blunt-pointed bistouri, guided with the operator's finger placed within the anal margin, and then pressed through the tissues to the extent of one or two inches

external to the anal opening, and embracing the superficial fasciculi of the muscle, leaving the deeper portion intact. Some operators paralyse the sphincter by means of extreme tension or dilatation; for instance, Van Buren.

The third stage in this procedure embraces the insertion of the sutures. The point of the needle is passed through one side, entering at least one inch external to the pared margin, and dipping deep, so as to embrace the fissure and cause the point to emerge at a location precisely opposite the point of entrance, and the same distance from a point opposite on the pared margin. Each deep suture should be inserted in same manner, the one nearest the anus always the first.

The ligatures when passed and ready to close, present looped ends on one side and free ends at the other side. This is accomplished by first introducing the curved needle, properly armed with an ordinary thickness of wire, then seizing the exposed end of the wire as it emerges at an opposite point; withdraw the needle simultaneously, unwrapping the wire, until the needle is withdrawn from the flaps, then excise the wire close to the point of the needle, allowing some latitude for play. You now have but a single strand of wire in situ. To double the suture you have but to cut some strands of wire sufficiently heavy and long, that when doubled or looped to allow for the breadth of the gap. Now fasten one end of the inserted wire at the looped end of the double wire, pressing its sides well together. Now make traction on the single wire, and thus draw the looped end of the double wire through and through until it emerges at the opposite side, or opening, then detach the single wire from its attachment at the loop; it may be removed and used thus again, and so on until all the double sutures are placed in position. Two pieces of elastic bougie, or ivory rounded for the purpose, are next placed in their respective positions, one on each side; one piece passed through the wire loops, and then secured by traction made on the free ends at the opposite side. The second piece is laid in the same direction, both parallel with the rent. The approximation of the pared surfaces are now effected by the equal pressure of the assistant's hands from both sides; the pared sides of the flap

are thus pressed together; then the free ends of the wire are twisted over the pieces of ivory that lay between them. The edges are thus secured in apposition.

As an additional precaution, and to prevent gaping or eversion of the edges, (a common accident), interrupted or intervening single superficial silver wire sutures should be inserted and secured by twisting, between the quilled form. Some operators employ the hare-lip suture, for this additional security. Before proceeding to close in the operation, one finger should be introduced into the rectum and another into the vagina, in order to test the accuracy of the co-aptation, and adjustment of the pared and secured surfaces. This being now satisfactorily performed, cleanse the parts thoroughly, being sure that there are no intervening coagula at any point, and that all oozing has ceased. Place a compress suitably proportioned, made of patent lint or other soft material, saturated with arnicated water, 1 part to 20, used warm; over this a soft folded napkin, and the whole of this dressing secured with a T bandage. The thighs being also secured with a roller bandage, a folded napkin being placed between the knees, to prevent the ill effects of friction.

The patient should now be placed upon a soft hair mattress and spring bed, properly protected with gum cloth and sheet covering. The gum catheter should be introduced, and so arranged that a competent nurse can draw the urine about once every six to eight hours, and for a period of four to five days. A soft elastic catheter may be used, and I prefer it to any other. A caoutchouc bag may be used as a receiver for the urine, and the outer end of the catheter may be secured to the same. The bowels should be kept bound for the first five or six days; the diet to consist of boiled milk, arrowroot, beef tea, mutton broth, a small portion of tender, broiled meat, and if occasion require, some pure wine may be allowed. All things being equal, and everything looking favorable, in from forty-five to fifty hours following the operation, some of the most favorable looking of the deep sutures may be removed; and the superficial ones on about the seventh day. It is generally conceded best to keep the bowels bound for from fourteen to twenty-one days; but

we do not think it necessary, nor advisable, as we have frequently found union sufficiently firm on the ninth day, to admit of a gentle movement. After the parts have united, they may be moved with warm water enemas, composed of a little castor oil and some common table salt, say a dessert or tablespoonful of the former, and an even teaspoonful of the latter, to one quart of warm water, *administered warm*. Fruit and a few vegetables may be added to the patient's diet, as soon as circumstances will permit.

The operation I have herein detailed is known as Brown's method. On reviewing all the features throughout, there is really nothing new in it. The quilled sutures have been in use many years by Roux, Davidson and others. The incisions of the skin and subcutaneous tissues had been used by Dieffenbach; of the sphincters, by Saucerotte; and the use of opium to constipate the bowels, also by Dieffenbach and others. The particular points at which the sphincter muscle of the anus is divided is however original with I. Baker Brown, and also the combining of all the peculiarities mentioned in the various steps of the operation, into one method. He has illustrated their great value with a record of many successful cases, larger in point of success and numbers, than any other specialist, and certainly has contributed a noble work to the science of surgery, and justly gained a world wide reputation thereby.

The following is what we will term the *American method*, and the only one; (with the exception of the operation attempted by Prof. Horner, referred to in a former portion of our remarks).

It was first practiced and introduced by D. Hayes Agnew, M.D., Professor of Surgery in the University of Pennsylvania. The preparatory treatment and positions are the same as that last described; it will not therefore be necessary to repeat.

AGNEW'S OPERATION.

The following remarks apply to deferred cases especially; as witnessed by the writer.

The professor commenced the revivifying process from behind forward, including a slight portion of the labium; the

breadth of which should extend inward, so as to include a small portion of the vaginal mucous membrane, and outward toward the buttocks. The paring was made superficial, so as to abrade the surface, and about one inch wide when completed. Both sides of the rupture were thus prepared, precisely alike. The assistants supporting the limbs, now compressed the sides and made traction so as to render the recto vaginal septum tense. When in this condition the edges may be readily freshened to the extent of $\frac{3}{4}$ of an inch; or the operator may, if he so elect, insert his finger into the rectum and by making the part tense, resort to the scissors for freshening this portion. Great care should be exercised so as not to omit a single point in the paring process. The bleeding was rather free, but was easily arrested; there was no necessity, however, for ligatures. Ice water applied by means of an ordinary syringe, was the method used in arresting the hemorrhage, and the author states that this rarely fails. Should it fail, however, he then proceeds, notwithstanding, to introduce the sutures, relying on the adjustment.

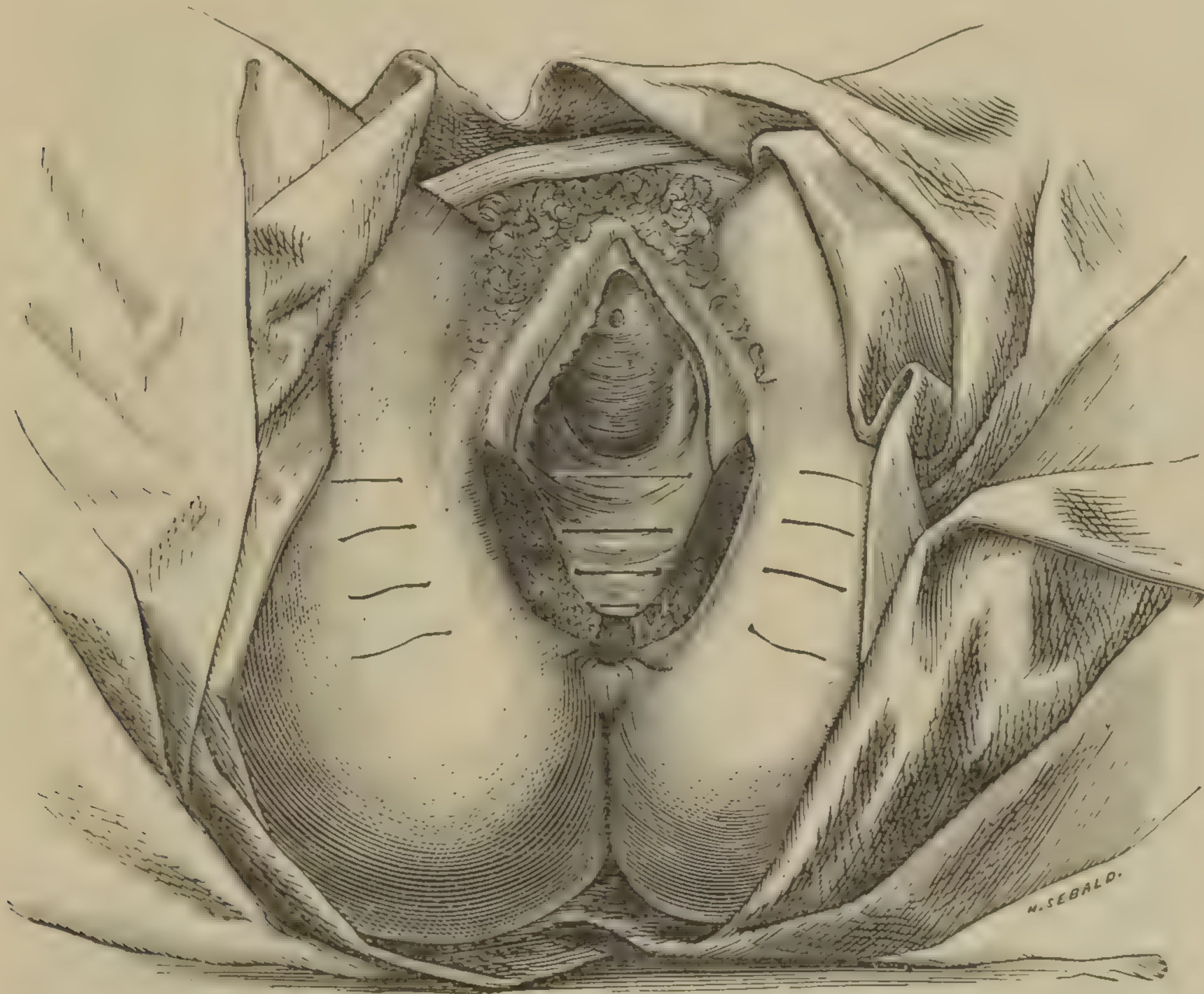
Sutures. The approximation was made by the use of the interrupted sutures; one series was placed *deep* and a second series *superficial*. The material used was iron wire silverplated. He places much reliance upon the introduction of the first stitch and prefers the iron wire because of its strength. It is not so liable to break as the silver wire.

He introduced the deep sutures first commencing with the most posterior one; next to the rectum. From three to four is the usual number used. The superficial sutures he introduced, intermediate or between the deep ones.

The needle was entered $\frac{3}{4}$ of an inch from the pared margin, below its lowest point at the anterior-portion of the ischio rectal fossa, then carried upwards and forwards until it appeared at the middle of the septum, just above the line of denudation. The wire was then drawn through the eye of the needle and the latter withdrawn; then made to pass unarmed through the corresponding parts at the opposite side emerging on the septum, close to the first puncture. The wire was again passed through its eye, and as the needle was withdrawn, made the

complete circuit of the wound, so that when it was tightened, the parts closed together like the mouth of a purse. At three

Fig. 8.



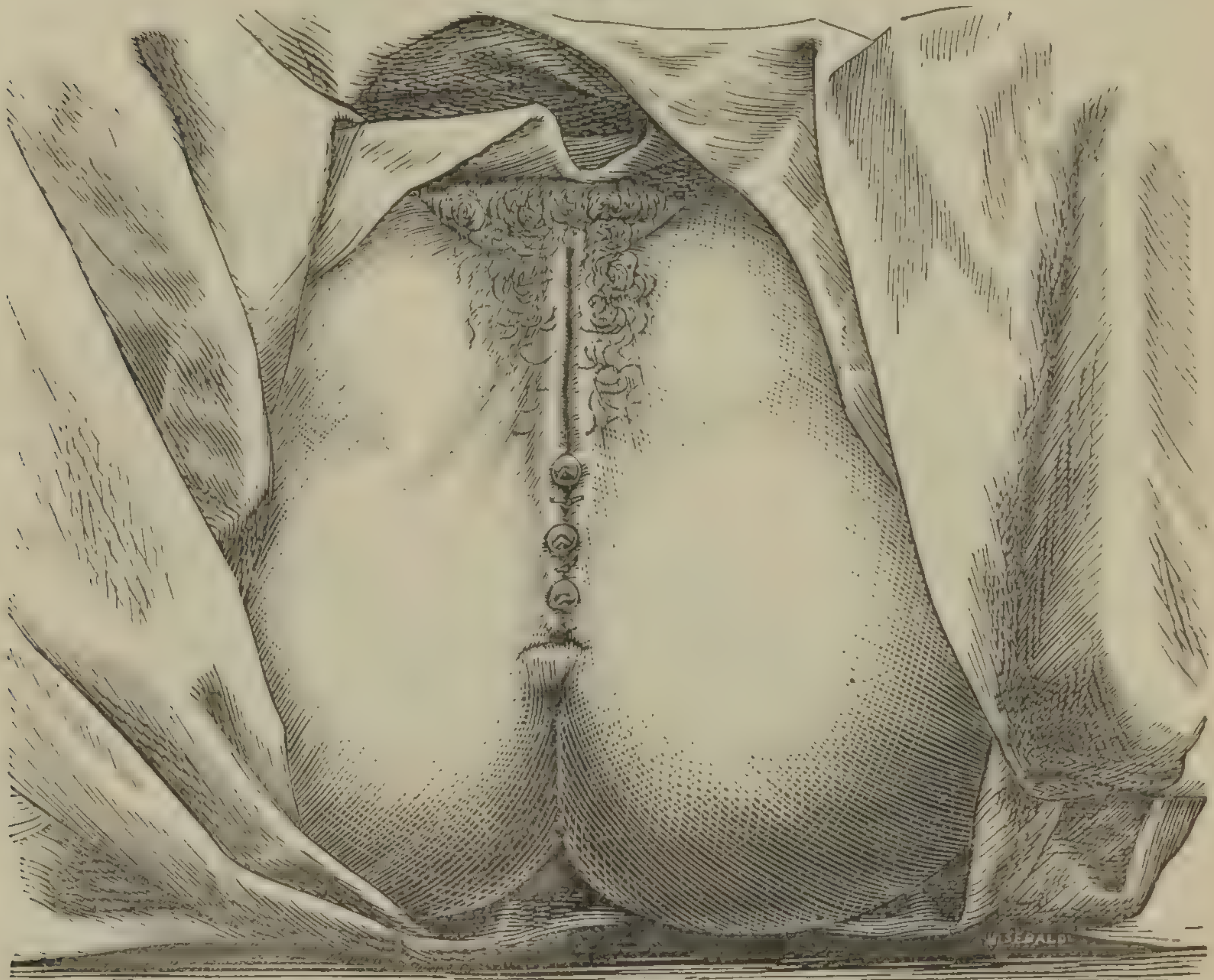
equidistant points deep sutures were inserted, then followed the approximation.

Adjustment. Carefully removing and sponging the parts and nates, the latter were pressed together by aid of the assistants, and the ends of the sutures in the order of their introduction (the one nearest the anus first) were passed through the hole in the adjuster at the end of the forceps and then being strongly drawn upon as the latter was being carried down, the parts were brought in apposition with accuracy. To maintain and secure this adjustment, he resorted to perforated shot, run down over the projecting ends of the wires, these were firmly clamped by means of suitable compressing forceps.

After securing the remainder of the deep sutures in same manner, he proceeded to insert the superficial ones. An ordinary curved surgical needle was used, armed at the heel with

the same kind of wire. These were entered $\frac{3}{8}$ of an inch from the edge on one side; were made to penetrate the skin and cellular tissue, then to emerge at an equal distance from the edge opposite. These were secured by simply twisting the ends. The protruding ends were then all trimmed away, the superficial ones at the twist, the deep ones near the compressed shot.

Fig. 9.



The dressing consisted of a strip, $2\frac{1}{2}$ inches wide of adhesive plaster, 12 to 14 inches long, was placed across the nates to give additional support, the limbs were bound together and the patient was put to bed in the usual manner; a precautionary measure in shape of a napkin placed between the knees to prevent excoriation of the surfaces. Patient was permitted to lie on either side, and also on the back.

The author of the operation, at last report, had made *fourteen* successful and satisfactory operations by this method, one being a case of complete procidentia.

There is much in the way of simplicity, and no small amount

of originality, to commend in this plan. It is certainly worthy of imitation.

REPORT OF CASES, OPERATIONS AND TREATMENT.

In our own field of practice, we have fifteen cases of operation to report, six of which were recent, complete and incomplete; the balance, or nine, were delayed or secondary, and most of them complete ruptures of the perineum.

CASE 1.—March 4th, 1859, while a resident of Canada, and practicing there, I encountered my first case of ruptured perineum. The mishap occurred while the patient was in other hands; in fact I found the case an abandoned one as far as her former professional advisers were concerned. Her last medical attendant had left the patient on the fourth day after confinement, with the assurance that he could do no more for her, stating that her case would “come out all right.” I was called on the fifth day, and found the patient in a sad plight. The parts were swollen and inflamed considerably; and suppuration was established. The presence of fœces, and urine, in and about the wound, served to complicate and irritate the lacerated surfaces and surrounding parts very much.

The patient was a primipara, nineteen years of age, of English birth, had much fever and headache, much thirst, no appetite; otherwise her general condition was good. Labor had been tedious, child was large, weighing fourteen pounds. I reluctantly accepted the responsibility of the case, and proceeded with proper materials to cleanse the parts with warm carbolized water; drawing off the urine, emptying the lower bowel with enema, etc.

Having nothing else at hand for sutures, I was obliged to use silk ligatures; stimulating the raw surfaces with a mild application of Argent. nit., grs. x to aqua f. ʒi.

I will here take occasion to state that the rupture involved the entire perineum, also the external sphincter ani muscle. Introduced first deep perineal sutures, four in number, and three intermediate superficial ones. The ordinary curved

surgical needles were used and were entered three-fourths of an inch from the lacerated margins, dipping down rather deep, introducing the one at the ruptured sphincter first. After drawing and tying these ligatures, the parts being now in apposition, a compress, moistened with carbolized oil, together with a roller bandage, was applied; a compress being laid between the knees to avoid excoriation; gave Aconite³⁰, and ordered a nourishing diet.

Called on the following day, found the patient rather more comfortable; continued treatment and diet. On the fourth day after the operation, called, removed the dressings; was surprised to find good union; then removed all the stitches.

Re-applied dressings; used suppositories composed of cacao butter and opium, gr. $\frac{1}{2}$, to quiet the bowels and gave due attention to the urine. There being now no special indications for any internal remedy, nothing remained but to pay proper attention to the dressings until the fourteenth day, when the parts had healed; my services in the case then ceased. The patient took my advice and remained quiet, resting herself for a month. After this she reported herself entirely restored, and I had the satisfaction of having it practically demonstrated, as I was called upon two years later to attend the patient in her second confinement, and can testify to her having passed "the rubicon" in safety. Everything in connection with this confinement period, passed over without any drawback.

CASE 2.—Occurred April, 1860. Patient a colored woman, æt. 47, fifth labor. This was a secondary or delayed case, both in point of laceration and operation. Patient had been afflicted in a former labor with partial rupture, and was treated as far as I learned, on the expectant plan; simply had the limbs bandaged together.

On the occasion in question, the labor was a case of twins, one a very large child and the other rather small. The large one was born first; the laceration occurred during this period of the labor, the case being under the supervision of a colored midwife. I was not called until the woman conceived for the sixth time, when I found gestation had advanced to the third

month, with the following symptoms and conditions. There was more or less prolapsus of the uterus and bladder. Patients limbs were anasarcaous, and swollen from the knees downwards, including the feet. Constant desire to urinate, with urging, accompanied with frequent and only slight passages of urine. Severe sacral pains, with urging to stool; this condition was aggravated very much by the displacement—downward—of the uterine organs.

The only relief that could be obtained, was by lying on the back, with head low and hips well built up with pillows; patient was also much prostrated. The period that had elapsed between the first partial and second, or complete rupture, was twenty-three months; that between the second rupture and the time I saw the patient, was seventeen months; total, forty months, or three years and four months from date of first mishap. Confinement to bed was ordered, freedom from labor and all exertion. After a preparatory course of treatment consisting of manipulation by means of persistent taxis, I succeeded in replacing the uterus and bladder in their normal positions. This treatment was supplemented by means of a proper support consisting of a compress to the perineum, supported with a T bandage, and the *decubitus* position, as well as a good generous liquid diet; also mild soothing applications to the external parts, which were somewhat inflamed and sensitive. These manipulations consumed about six weeks time, repeated every two to four days. The patient being chloroformed, operation was then made, revivifying by paring the cicatrized surfaces of the perineal body or triangle, which in this instance were very dense. In this case the silver wire was used for sutures. Four deep seated and five intermediate superficial sutures were required to secure the parts *in situ*. The usual dressings were applied. On the third day the deep sutures were all removed; the superficial ones on the eighth day, the patient making a very favorable recovery, with no untoward symptoms, resulting in firm union of the lacerated parts.

CASE 3.—Was a young girl, æt. 16, born in England, who conceived on board ship, carrying her child to full term, May,

1860. She stated that her delivery was made with forceps. The perineum gave way, just as the shoulders passed. Efforts were made to overcome the ill-effects by the expectant plan, *i. e.*, simply bandaging the limbs and trusting to spontaneous recovery; her physician informed her, when his services ceased, that her case was cured. I saw the case nearly a year after the occurrence of the rupture, and found the patient much reduced from overwork and fatigue, in consequence of her having to do housework and nurse her child, who was a large, fine bouncing boy, requiring much attention. An examination revealed a rupture of the sphincter ani, involving the perineal triangle, two-thirds of its extent. There was partial prolapsus of the rectum and bladder, accompanied with the usual distressing symptoms. I ordered the recumbent position, with head and shoulders low; the hips somewhat elevated, and a generous diet. She was then within two weeks of her monthly period. After attending to the usual preparatory steps, I made the operation freshening the cicatrized parts, and using quilled and superficial sutures, the latter being of carbolized cat-gut.

Due and daily attention was given to the patient. Dressed this case, in the usual manner. On the fifth day after removing the dressings, cleansed the parts well and not feeling warranted in removing any of the sutures, redressed the case. On the eighth day removed all the deep sutures, five in number, leaving the superficial ones *in situ*, then redressed the case and allowed these to remain until the eleventh day, when all the superficial ones were removed.

The patient was not allowed to go about or be upon her feet for a period of three weeks. The result was a fine and satisfactory recovery, with entire freedom from her former complications.

CASE 4.—Patient unmarried, *æt.* 27. The rupture followed a breech presentation and occurred during her second confinement. Stated her first labor was very severe and tedious, lasting five days and nights; the first child was still born, was delivered October, 1863; being also premature, caused, from her own account, by taking medicines to produce miscarriage.

In September, 1865, she was again taken with labor-pains, a breech presentation, and during two days the child had advanced only as far as the umbilicus. Labor was completed on the morning of the third day. Its limbs were much discolored from long continued presence in the pelvic cavity. There was also some delay in getting the head through; the chin becoming locked between the symphysis pubis and sacral eminence. Severe hemorrhage followed, which ceased as soon as the placenta was removed, which was facilitated by kneading and friction over the hypogastrium. The child weighed ten pounds, eight ounces.

During the passage of the breech and while forceps were being used, she stated that she felt some tearing and giving away. She then fainted, but soon recovered, and then realized, to use her own words, "*she had been torn.*"

During the month of April of the following year, 1866, I was called upon to give an opinion of her case. Examination, while standing erect, revealed a displacement of the uterus; bladder and rectum, protruding without the vulva, and while in that position, it was impossible to return them.

Requesting the patient to recline, lying with head and shoulders low, with hips elevated, by making taxis over the abdomen with one hand, and the other grasping the extruding organs, I succeeded, after some difficulty and pressure, pushing upwards and backwards, in replacing these organs.

I then examined the perineal structures, and found them torn through, including the sphincter ani muscle, up into the recto vaginal septum, and thoroughly cicatrized. Enjoined rest and the recumbent posture, like-wise a preparatory course of treatment.

The operation was made by first freshening and revivifying both sides of the perineal triangle, then introducing the sutures, which were metal—silver wire. The first stitch was taken in the sphincter ani muscle. Four deep sutures were inserted, also, and one at the apex of the triangle. The sutures were now drawn, commencing at the sphincter stitch, then the recto vaginal stitch, afterwards the intermediate ones, and finally the superficial stitches were inserted, after twisting the deep seated

sutures, when the entire rent was accurately approximated. The operation being now completed, the parts were dressed as usual, the proper precaution being used, to provide for the urine and fæces, some soft cotton was wrapt about the protruding ends of the silver-wire ligatures, and thus prevent any pricking or irritation to the surrounding parts. A nourishing and slightly stimulating diet was ordered. This patient had several severe chills during her illness succeeding the operation, also much prostration. *Ars. alb.*³⁰ was administered until relieved.

The dressings were removed on the sixth day; the sutures were not removed. Reapplied similar dressings for three days longer, each day, again made an examination, finding it warranted, I removed the deep sutures, allowing the superficial ones to remain.

On the twelfth day after the removal of the dressings, found good union has ensued. Kept the patient confined to her bed for three or four weeks, she was then allowed to move about cautiously, the case resulted in a good recovery.

CASE 5.—Was a primipara, æt. 18. Was called November, 1867, after the child was born, and found a case of laceration, complete. Was informed that the case had been a rapid labor and patient was alone during delivery, the medical attendant, who had been summoned, failed to appear. Child was born about 3 A.M., the mother stated. Patient has lost considerable blood before her condition was discovered.

Was summoned at 11 A.M., the following morning, found the patient very weak; too much so for an operation.

Administered *China*³⁰ and ordered nutritious diet. She recuperated rather promptly, so that on the fourth day I proceeded to readjust the lacerated parts. The patient was placed under the influence of chloroform, having first evacuated the bowels and bladder.

Before introducing the sutures I scarified and revived the torn surfaces. As soon as the oozing of blood ceased, I proceeded to close the parts with double twisted sutures and perforated shot, to the number of four deep ones; also inserted superficial intermediate sutures. The usual precautions of relieving the patient of urine, and binding the bowels, with cathe-

ter and suppositories, were used. Applied warm carbolized lotion, and the usual dressings daily.

On the second day pulse ran high; skin was hot, especially over the abdomen; temperature ranged to 104° ; symptoms of delirium, with slight subsultus and restlessness; pulse 140, quick and full; pupils dilated. Gave Bellad.³⁰ December 3d.

On the following day there was increased tenderness, delirium and subsultus milder. Prostration and thirst, with desire to drink but little at a time; also some chills; for which class of symptoms gave Ars. alb.²⁰⁰, repeated every two hours. The spinal hot water bag of Dr. Chapman was applied, and the hot water was ordered to be renewed every half hour. Visited the patient at midnight and found her in a warm glow and sweat; also more composed, with a lower temperature, viz., 102° . Pulse diminished in force and frequency, viz., 110. Ordered light and mild diet, drink of cold, weak tea.

On the fourth day patient was better. Tympanitic condition lessened and abdomen soft. Prescription continued.

Fifth day.—Patient improved; gave Hepar sulph.³⁰ every three to four hours to promote cicatrization. Otherwise continued treatment same as before.

Sixth day.—Temperature 99° , pulse 95; still improving. Made no change, except the dressing, which was renewed.

Seventh day.—Better; temperature 98° , pulse 92. Treatment and diet continued. Dressings changed.

Eighth day.—Better; ordered more generous diet. Dressed the parts, and removed the upper and lower deep sutures, the parts being healed. Replaced dressing as before, and discontinued spinal hot water bag.

Ninth day.—Still improving. Patient had a slight stool, rather loose. No disturbance of the adhesion of the sphincter muscle. No untoward symptoms. Patient passed to a steady recovery. By the twelfth day all the sutures had been removed.

Patient was confined to her bed, as a precautionary measure, three weeks longer, with limbs bandaged. Result, complete recovery; the child, an eighteen pound baby, was sent to the foundlings home.

CASE 6.—Feb., 1868, was consulted by a woman, æt. 47, who

stated she had borne nine children. Was married in her eighteenth year. When her seventh child was born, partial laceration of the perineum occurred; she was then in her thirty-second year. The doctor in attendance resorted to the expectant plan, using simply a bandage, and trusting the case to nature. She always complained afterwards of bearing down pains, with more or less desire to urinate; frequent difficulty of making stool, with almost constant pain in the sacral region, which always was relieved for awhile by pressure with the hand, and on lying down.

At times, and especially when affected with diarrhœa, these pains were much aggravated. She stated that the mouth of the womb could be felt at that time just within the opening, or vulva, when at stool, or when moving about much on her feet.

Patient was of an active, energetic disposition, and was in the habit of carrying home heavy baskets of marketing, three times a week, for a considerable distance. At each successive labor, viz., the eighth and ninth, the parts were torn each time, until the recto-vaginal septum was involved for an inch and a half beyond the limit of the perineal triangle.

Fifteen years after the first rupture, and nine years after her last child was born, I saw and examined the case. She presented the following condition: The patient could not stand erect and walked in a position much inclined forward, looking like an aged person seventy or more years of age; was haggard and pale, also very weak, having been more or less confined to her house and bed for seven years prior to the period I was called. Pulse was feeble; respiration short, labored; her favorite position being on the back, with lower limbs flexed and spread wide apart. Digestion was remarkable, considering the nature of the case. Was obliged to live chiefly on fluid diet, on account of the great distress she experienced when having stool formed from a solid diet. She described these occasions as being as severe as any labor, and seemed to dread them as much; in fact she was obliged to use enemas to obtain a stool, and then in insufficient quantity. The urine had to be drawn for several years prior with the catheter. The catamenia had ceased in her forty-fifth year.

An examination of the parts involved revealed the following appearance: Prolapsus of the uterus and bladder complete, with partial prolapsus of rectum. There were extensive adhesions at and completely encircling the vulva, and subinvolution of the vaginal walls. The entire surface of the protruding mass had lost its identity, having been completely changed from a mucous to a tegumentary covering. (Fig. 10.) Here was a condition of parts such as I had never witnessed before and had not even heard of. I was much puzzled, and took time to look up authorities on the subject, but found no comfort in shape of information anywhere I applied. The case had been pronounced hopeless, by various medical men who had been applied to, on former occasions. Nevertheless I treated the patient for several weeks by means of repeated taxis, keeping her in a recumbent position of decubitus, with head and shoulders low, and hips elevated; prescribing for her a fluid, nourishing and somewhat stimulating diet. After much delibera-

Fig. 10.



tion I then figured out a plan, and submitted it to the patient, and her daughter, the only one living with her. They both consented to place the entire management of the case in my hands, and allow me to use my own judgment. I should here remark, that a few remedies had been given as symptoms presented themselves during the period above referred to; but

I rather think the abatement of her physical ailments was due more to quietness, rest, position, good nursing and a proper diet.

After vainly seeking for professional assistance, I succeeded in obtaining only the aid of my associate in the practice at this time, although he did much to discountenance the operation.

OPERATION.

First evacuating the bowels and bladder, the latter being very much atrophied and of very limited capacity, the patient was ætherized. I should have stated that the patient had been very carefully examined several times during the preparatory course of treatment, and although there was some functional disturbance of the heart and circulation, still not sufficient to contraindicate an operation, and the use of anæsthesia. I then proceeded to dissect up carefully the adhesions around the vulva, and found them very dense and extensive. It seemed as though the upper limit never would be reached below the limit of the abdomen. Finally, by means of slow and persistent efforts, I at last succeeded in detaching them, having to make considerable tension upon the protruding mass to enable me to complete entirely their free dissection. This being accomplished, the parts were bathed freely with hot water and annointed with simple cosmoline, and then enveloped with a soft towel; by means of persevering and continued taxis of more than one hour in duration, they finally yielded and were passed up into the cavity of the pelvis. Having gained this much, and feeling greatly encouraged, I determined to be content for the present, delaying the final operation for the time, as the operator and patient both needed rest. With the usual dressings for operations of these parts, together with the care required of both bowels and bladder, the patient was put to bed, being placed in the same position as heretofore described. Diet consisted of broths, milk toast, etc., no solid food being given. After the expiration of six weeks, due attention having been paid to the wants of the case in all respects, and no untoward symptoms occurring, the second operation was made.

The relaxed organs were nicely healed, keeping their position; and the functions of the bladder and rectum had improved, the patient having more control over both the organs. The decubitus position, with hip well raised, had been maintained throughout the six weeks referred to.

SECOND OPERATION.

I now made efforts to repair the perineal structures. It will be remembered that an interval of fifteen years had elapsed between the first rupture and the time when I first saw the patient. Therefore it may be readily imagined that the parts were not in a favorable condition for an operation. I found it extremely difficult to limit what were its former and natural boundaries; nevertheless I succeeded by careful measurements; and then outlining the remnants of the parts involved in the rupture, with pen and ink, proceeded with suitable knife and forceps to incise these lines, dissecting out both triangular portions of what was now cicatricial structure. This step in the operation was after the manner of a rhinorrhaphy operation, only rejecting the dissected portions.

This proved somewhat difficult and protracted, on account of the profuse bleeding, the parts being very vascular; still it was effectually accomplished. Next freshened the margins of the recto-vaginal septum; this was done with properly constructed scissors and rat-tooth forceps. Now introduced recto-vaginal sutures first, these were four in number; next in order the sphincter ani stitch.

Here let me add, that I have invariably, from the first operation I ever made, where this muscle was involved, introduced the needle within the limits of the torn ends of this muscle and not without, as I have seen performed in some cases by other operators, with incomplete, unsatisfactory results. THE main features in an operation for COMPLETE RUPTURE ARE PRIMARILY THE ENTIRE RESTORATION OF THE SPHINCTER ANI MUSCLE TO ALL ITS NORMAL FUNCTIONS AND RELATIONS TO THESE PARTS; THOSE OF THE RECTAL OPENING AND PERINEAL BODY ARE BOTH SECONDARY. WHEREAS, IN PARTIAL RUPTURES, AND WHEN

THE SPHINCTER IS NOT INVOLVED, THE PRIMARY FEATURE THEN BECOMES THE RESTORATION OF THE PERINEAL BODY. In this instance the sphincter and adjoining structures had become so shrunken that I was obliged to make what is known as Dieffenbach's operation, which consists of the lateral incisions, for the purpose of relieving tension of the parts when the sutures are drawn. The sutures used in this case were the double silver quilled variety, and were taken very deep; nine deep penetrating sutures, together with four intervening superficial ones; total, thirteen stitches. A finer grade of wire was used for the last named.

The usual dressings, such as already described, and same procedure, were resorted to. The patient bore the operation and its effects nobly, and rested well the night following.

On the following day, little or no fever; pulse 95; temperature 99°; and feeling comparatively comfortable, judging from her appearance and symptoms. Took some nourishing food, and relished it. Attention was paid to the urine at stated and regular intervals. To abbreviate the history of this case, and thus avoid lengthy details, we will state, that the patient progressed to a good recovery, without any unfavorable symptoms. Dressings were renewed from time to time, as the case demanded, and much the same applications were used; also daily deodorizing the patient's bed with carbolized spray. The first stitches removed were some of the deep ones, three in number, on the fifth day. On the eighth day all the remaining sutures, including the sphincter and recto-vaginal, were removed, and the parts were nicely healed. The patient was kept closely confined to bed, in a recumbent position, for a period of seven weeks, when she was allowed to move about. But the long contracted habit of stooping and bending forward, to which she had been addicted for years, could not be overcome unaided. Therefore a Banning's spinal and abdominal supporter was applied, which aided her very materially in standing erect. She wore the apparatus for a period of two years, and then laid it aside, feeling fully able to support herself erect without its aid. No return of the trouble ever recurred. Some seven months ago I heard of the case, and she

was then in the enjoyment of good health with no return of any of her former troubles.

This case demonstrated the practicability of overcoming a condition of affairs that had been for years pronounced by numbers of physicians, also some eminent surgeons, as "BEYOND THE PALE OF SURGERY."

CASE 7.—Was called April, 1868, to attend what was stated to me to be a case of confinement, and upon arriving and entering the room of the patient, found the child was born, the mother lying unconscious, having fainted as it appeared from loss of blood. Turning aside the bed-clothing, found a large mass of coagulated blood in the midst of which the placenta was imbedded. The hemorrhage had evidently ceased spontaneously, when syncope set in.

A further examination plainly indicated rupture of the perineum, involving the parts through the sphincter ani. I examined the os uteri and finding it contracting, though tardily, aroused the patient with an application to the nostrils, of aqua ammonia. As soon as she could swallow, gave China³⁰, repeating frequently, and ordered it to be continued afterwards every hour, until she had regained some strength. The account received was that the patient had been, more or less, in pains for three days, which were supposed to be only false pains. Early on the morning of the fourth day, at 3 A.M., severe and strong pains set in. Her husband was sent with a message to call me, but failed to deliver the call until 11 A.M. following day. Having no proper assistant at hand, I merely applied and secured a compress, moistened with arnica water, to the vulva, and bound the limbs together. Called the evening of same day, at 10 P.M., and found the patient dozing quietly; she had had no further hemorrhage during my absence. On the following day I called with assistance, and proceeded at once to repair the breach. Found the torn parts needed no other interference than simply the introduction of stitches. First examined the rectum, finding it unoccupied as far as the finger could reach. Relieved the bladder; administered anæsthesia. Introduced double silver wire sutures, first securing the torn ends of the sphincter muscle. Three other deep stitches were also

taken, in the order, from below upwards to the fourchette. The margins were now approximated, then the ends of the sutures twisted in the order of their introduction. Superficial stitches were also used, two in number; these were of a finer grade of wire, and taken in the intervening spaces between the deep ones. Dressings were now applied as usual; quietness and rest were enjoined; the remedy, China³⁰, was continued at intervals of three to four hours during waking hours. Visited the patient daily, giving attention to the usual demands of such cases, already herein referred to.

On the second day examined the parts; found adhesions apparently starting in; reapplied dressings.

On the fourth day removed dressings; found union sufficient to warrant the removal of the two central sutures. Redressed parts; as usual, patient had improved much, was gaining strength. Had slight fever, however, pulse a little rapid, 95, temperature 99°.

On fifth day patient had some thirst, with sensitiveness over the abdomen, which was tympanitic, pulse rose to 102, temperature 102°, skin was hot and dry; frequent desire to make water; tongue coated, headache, no appetite. Diet: wine whey, crackers and milk, weak tea, etc.

Sixth day.—Called and found patient had had a restless night; was somewhat flighty and restless, pupils dilated. Pulse full and bounding, 120, temperature 107°. Abdomen more swollen and sensitive, also more tympanitic. Removed dressings and found parts somewhat tumefied, red blush in and around the margins of wound, which was very tender to the touch, or by even slight movement of the body; sutures, excepting cut ends, buried out of sight. Erysipelatous complication had developed. Applied locally hot applications of sulphite of soda in solution, grs. xx to aqua f̄zi, adding a little glycerine to prevent rapid evaporation. This was ordered to be frequently renewed, by means of a syringe, and thrown on to the dressing over the wound and inflamed parts. Gave same remedy internally every two hours, proportion of one grain at a dose. Applied one of Chapman's spinal hot water bags to the back; ordered renewal of hot water every forty minutes and thus

kept up. Diet light and nourishing, with toast and milk, weak tea, milk punch, beef tea, etc.

Seventh day.—Called and found the patient easier, all the unfavorable symptoms abating, inclination to urinate less frequent. Pulse softer, 105, temperature 102°. Wound not so swollen; abdomen not so sensitive; cystic irritation diminished. Patient remained quiet as long as the spinal bag was kept hot—when it got cool she became restless and desired the hot water to be renewed. Renewed same dressings, after removing the old, bathing the parts freely with hot water. Prescription renewed.

Eighth day.—Patient still improving; pulse 104, temperature 99.5°. Removed dressings; parts operated on were much better in every respect, redness and swelling had all disappeared, marked diminution of sensitiveness. Continued prescription and dressings same as previous day; likewise diet same as before.

Ninth day.—Patient passed a comfortable night, no restlessness, little fever, skin inclined to be moist, less thirst, countenance more cheerful, pulse 98, temperature 99°. Examination of parts operated on presented a more promising appearance. Sutures were now clearly defined, all of which were removed at this visit. Redressed the wound same as before, still using same application. No motion from bowels since confinement, neither any desire. Some slight suppuration apparent where the sutures were drawn from, but union appeared firm. Hepar sulph.³⁰ was given three to four times daily. Diet of strong broths, milk, eggs, etc. The wound healed kindly, and the patient fully recovered.

CASE 8.—Was consulted August, 1868, to give an opinion in a case of seven years' standing; the patient a mother of seven children; was forty-nine years of age, formerly of Virginia. Accident occurred during her last confinement, which was an instrumental delivery. Patient was much broken down in body and in spirits, also was emaciated. She could scarcely move about without becoming very weak and short of breath.

Symptoms.—Much bearing down, upon assuming an erect

position, and feeling as if everything inside of her would fall out through the vagina. Pain and severe aching in small of back, over the sacrum and as high up as kidneys. Constant urging to urinate, passing small quantities at a time. Involuntary passages of flatus; with the stool there was much urging in both organs. Had passed the turn of life, having suffered during this term very much from weakness, losing much blood; appetite was poor, could not enjoy her food at all; had sour stomach and water-brash. Palpitation of the heart, with difficult respiration. Feet and ankles up to knees, would swell very much, and become œdematous, especially when upon the feet.

These symptoms and conditions would be alleviated, somewhat, when recumbent and at rest. Examination of the genital, rectal, and urinary organs, presented the following conditions. Protrusion of the cervix uteri, and a large portion of the body of the womb; the bladder and rectum also prolapsed. All these parts were more or less flabby and relaxed, at the time herein referred to. Patient stated that at times, when on her feet, or moving about, these organs would swell, and become red and somewhat painful. These symptoms would subside, after a few days rest, by lying on the back with hips elevated, head and shoulders low. There were some adhesions formed around the vulva here, as in the case already reported, (Case No. 7), but no such changes of the mucous surfaces of the protruding mass, still it was not as moist as natural. Patient stated that when they protruded, became swollen and hot, they were then much drier than usual, which was intensified by the friction from her garments.

I gave my opinion in favor of an operation, recommending first, a preparatory course of treatment. Both husband and patient acquiesced; and forthwith the case was placed under my supervision and care. To curtail this statement, I will simply say much of the course of treatment was resorted to in this instance as in Case 7, the only variation being in the selection of the remedies. The symptoms and temperament indicated *Nux vom.* Accordingly the 200th was administered. The gastric symptoms gradually subsided under the use of this

remedy. Much was accomplished in other directions, by means of quietness and rest, patient using the raised hip position. A carefully selected diet was observed, principally of milk, whey, egg custard, broths, free from fat; also a moderate amount of fruit, and as a beverage milk, as water disagreed with her, and tea and coffee were restricted. After some eight or nine weeks careful nursing, the patient improved physically, most of her distress having subsided, and she now was quite desirous of having the operation made.

Operation.—The usual preliminary steps were observed, such as the evacuation of the bladder and bowels, and the patient was put under anæsthesia; there being no contraindications for its use. She was placed in the usual position, same as for lithotomy; chloroform was used, and the patient passed under its influence very kindly. I was assisted by my professional associate and the lady's husband. The first step was to loosen up the vaginal adhesions, which were somewhat extensive, by means of taxis, and kneading the abdomen, raising up well the hips, at the same time pressing well upward. After some exertion, I succeeded in crowding back the extruding organs to which in this condition a compress was suitably adjusted and kept moistened with hot arnicated water, one part to forty, then binding the limbs together, placing them in a flexed position, the patient was put upon her side. This constituted the first stage of the operation. Diet and after-treatment in this case were much the same as in first operation of case No. 7.

Made daily visits until the close of the third week, at which time the cut surfaces had sufficiently healed so as to permit further procedure.

Second operation.—Prepared patient same as before, and when anæsthesia was complete, I proceeded to mark out on each side, what should constitute the perineal triangles. Dissected out the cicatrized tegumentary surfaces, bringing into view the ends of the torn sphincter muscle; freshened the margins of the recto-vaginal septum. As soon as the hemorrhage had ceased, I introduced four deep silver wire sutures, heavy double wire. This accomplished, the sphincter and suture was first secured, after the intermediate deep ones were placed in situ,

and the remainder were secured afterwards. Intermediate superficial sutures were also used, between the deep perineal stitches. The quilled or lateral supports were used in securing the deep ones; all the remainder were twisted single wire sutures. Five deep ones were used in securing the sphincter ani and perineum, besides three superficial ones. Four single wire sutures were used in the torn portion of the recto-vaginal septum. The margins were now nicely approximated; but the tension was more than I felt warranted in trusting, I therefore made the lateral incisions which had the effect of taking off the tension. The parts were now adjusted to my satisfaction.

The usual after-treatment was adopted here. The dressing being completed and the patient put to bed, she soon reacted nicely, some little sickness of the stomach was all she complained of. *Nux vom.*²⁰⁰ relieved this condition. Patient soon after fell asleep. Observed the usual precautions in regard to the bladder and bowels. On the following morning called and found the patient had passed a comfortable night. Water had to be drawn twice during the night. Pulse 95. Temp. 99°. skin warm, no dryness.

Second day.—Patients condition favorable, no untoward symptoms whatever. Pulse and temperature same as day before. Ordered the patient's room to be deodorized with Bromine.

Third day.—Some uneasiness about the parts operated on, but subsided after dressings were renewed.

Fourth day.—Patient was uneasy and restless, did not rest well during the night. Skin hot and dry. Parts about the perineum hot, burning and throbbing, urine hot, slight chills and creepings, pulse 110, temperature 102½°. Headache, anxiety and fears of death. Gave *Acon.* 200th, repeated every two hours; called the evening of same day and found patient easier.

Fifth day.—Increase of heat, and a burning in the region operated on. Patient seemed to doze at intervals through the night, but would wake up and start, complaining of pain and throbbing in the parts operated on. Tongue was coated, dry hot and feverish; headache. Pulse 115, temperature 104½°.

Now removed the dressings, sprayed the parts as before, with carbolized water. Some swelling was apparent and redness of the wound. Slight pressure left a transient white spot, showing an erysipelatous condition, involving both of the lateral incisions, and wound as well. Removed the two remaining sutures. Applied sulphate of soda solution, in proportion of grs. xx. to aqua f $\bar{3}$ 1, hot; this was ordered to be used freely; the parts and dressing not being allowed to get dry. Dressed as in the usual manner. The same remedy was given internally and repeated in grain doses every 2 hours. The patient gradually improved each succeeding day, passing on to speedy recovery, the operation being a complete success. A few months later she had gained a condition of health and degree of comfort, that she had long been a stranger to. One year later heard from the patient, who stated that she was then in robust health.

CASE 9.—Was called to see this case October, 1869. The patient was of Irish birth, æt. 27, and had just been delivered of a hale, hearty child. She had been attended through her various confinements by a midwife, who was present when I called. The latter stated that the patient was in labor some nineteen hours, and had vigorous pains throughout the period named. Examination of the case showed, a partial rupture of the perineum, extending to the sphincter ani muscle; also involving nearly three inches of the posterior wall of the vagina. The after-birth had not yet come away, the patient had lost considerable blood, and the hemorrhage was still active on my arrival. The patient being of robust and sturdy health, however, did not seem to feel any marked weakness. By means of kneading the abdomen with one hand, and passing the other hand well up into the cavity of the womb, I found the placenta partially adherent to the left wall of the womb. Detaching the remaining portion and making conjoined manipulation with the hand that was introduced and the other outside upon the abdomen, I succeeded in removing what was the half detached placenta and excited contraction of the uterine walls, when the hemorrhage ceased. After caring for the child, preparations were made for an

operation, to secure and restore the lacerated parts. Placing the patient in the usual attitude, heretofore described as in lithotomy, she was chloroformed; this accomplished, I proceeded to introduce the sutures. Passed in first three single wire sutures through the vaginal rent, afterwards three deep perineal double sutures, of silver wire. Closed the vaginal stitches by first twisting these, and bending the protruding ends flat wise, protecting the vaginal surface from irritation with carbolized cotton. The deep perineal sutures were secured; commencing at the posterior fourchette, thence towards the anus, using the quilled lateral supports. The margins were nicely coaptated when all the sutures were in situ. The ordinary dressings were used, and the usual requirements of such cases met, viz.: carbolized lotions; attention to urine and bowels, also purifying the atmosphere of the patients room; proper diet, mostly fluids. Prescribed China off.³⁰, a dose every three hours, except during sleeping hours.

Without going into any further details, we will simply state that after the lapse of the second day, the case was seen and properly attended to daily, until the fifth day, when all the sutures were removed; the parts having healed more rapidly than usual in such cases. The patient passed on to a speedy and complete recovery, leaving her bed to resume her duties on the nineteenth day; and no further trouble was experienced from this mishap, as I learned five years later.

CASE 10.—Was summoned, early in November, 1869, to attend a case of labor, at 3 A.M. Found the patient a young girl, æt. 16. She was attended by a friend, who stated that she called upon her casually on the previous afternoon, and was surprised, to find her alone, in labor. The patient persistently refused to have a physician; though her pains were very strong and seemed to convulse her. The attendant delayed, but finding after the lapse of some nine or ten hours, that the patient gave evidence of swooning, she started off at once, and being the nearest physician at hand, I was called. On my arrival, I found her in convulsions, with head thrown back, teeth clinched, sudden starting of the limbs and entire body. Pupils were dilated, breathing labored and stertorous; during

the intervals between the paroxysms there was subsultus tendinum. For this condition Bellad.³⁰ was given every fifteen minutes, until the spasms grew less in force and frequency, which was within an hour. A further examination revealed the head and shoulders of the child, which had just emerged through the vulva. I also discovered by sweeping the finger over the perineal margin, that a partial rupture of the perineum, through the raphe, two-thirds its extent, had taken place. During the next pain the child was born and was of unusually large proportions. Considerable hemorrhage followed. The same process was adopted here for its arrest as in Case IX, which was successful; the placenta being removed and the parts cleansed, I at once proceeded to insert the stitches. The patient, a primipara, was chloroformed, and with the assistance of her friend, I introduced three deep perineal sutures. Finding that the parts coaptated nicely, the ends were twisted and properly protected and turned down lengthwise with the raphe; a compress was applied and the usual bandage. This case was treated much the same, as heretofore described; daily attention was given to the case, and it progressed favorably to a successful issue. There is nothing worthy of note, except to state that the stitches in this case were removed on the fourth day, the parts having nicely healed. The patient was confined to bed fourteen days, when she arose of her own accord. We will also state, in conclusion, that the child, in this instance, weighed over sixteen pounds.

CASE 11.—Late in November, 1869, was called in consultation by my former preceptor, Dr. J. G. Houard, to see a lady, æt. 40, rather large in weight and stature, who had fallen early in the seventh month of pregnancy, striking the perineal region over the sharp edge of a large wash-tub; having fallen backwards in her descent some seven feet. On my arrival at the patient's residence, I found her lying in a state of semi-consciousness, pulse weak and rapid, skin cold, sweat over the face and forehead, respirations somewhat labored and long, with sighing. I recognized the condition as one of traumatism, and accordingly suggested Arnica mont., 30th

trit. This remedy was given every fifteen minutes, and so continued until the fourth dose, when she presented symptoms of recovery from the shock. Examination of the perineum revealed an extensive ecchymosis and laceration of that region, from the posterior fourchette to the sphincter ani muscle; also partially detaching and otherwise injuring the os coccyx and sacral bones, the symphysis-pubes, mons veneris and urethra. The extent of the laceration involved two-thirds of the perineal body, implicating the posterior vaginal wall to a like extent. Some apprehension was felt that premature labor might occur as a result of the injury; nevertheless it was thought best to close the wound without delay. Bathing the parts freely with warm arnicated water—proportions one part of the tincture to thirty of water—three deep sutures were taken at equidistant points. The parts were now approximated and sutures secured by twisting them; and the usual means of protecting the exposed ends and dressings were applied. Patient was then put to bed to wait the issue, with orders to notify the doctor in the event of any uterine pains setting in. On the day following we both visited the patient, finding her as comfortable as could be expected, having passed a more favorable night than was anticipated, complaining only of a bruised and sore feeling throughout her whole body. There was slight fever and thirst, pulse 112, temperature 99°. Arnica was continued, the 30th internally, and the same strength of lotion locally as used the day before. There is nothing of note to report of the case, excepting that the patient passed on to a favorable recovery; carrying her child to full term; when she was delivered of a still-born child which was not fully developed. The patient stated that after the effects of the shock had passed off the movements of the fœtus in utero had ceased.

CASE 12.—Early in December, 1869, my attention was called to a case of what had been pronounced and treated, for several years by a number of practitioners as a case of "*falling of the womb*." Examination revealed the presence of the os and cervix uteri protruding outside of the vulva; the measurement of this portion was half a finger's length, while the

patient was in an erect position. Placing the patient in a decubitus position, with hips elevated, head and shoulders low, now making pressure in the line of the straits of the pelvis, displaced organ passed up into position, and, while the patient lay as described, it remained there. Sweeping the index-finger around the margin of the vulva, immediately I suspected there had been a laceration of the perineum at some remote period. Making now an ocular examination, I ascertained that my suspicions were correct. The case proved to be a partial laceration, which was confirmed by the statement of the patient, upon being interrogated. She said about fifteen years prior to this time, and after her second delivery, of a large child, she felt a tearing sensation during the passage of the child into the world. The doctor in attendance, on the occasion in question, admitted that a partial rupture had occurred, but comforted the patient by telling her that "*it would come all right.*" The *expectant* plan, was adopted. At the close of the first week the parts were examined by the doctor and pronounced "*all right.*" But there was a condition of affairs that not unfrequently occurs after this method of treatment. When the doctor was asked to account for the *womb falling* down so far, he remarked, "*Oh! it was a common thing among women.*" The patient being convinced now of the true state of affairs, an operation was advised as the only remedy for a permanent cure, to which she consented; her general health being fair enough to warrant an operation. The following was the method adopted: First, marking out the limits of the original perineal boundaries, as in Case 6, re-vivifying both sides of the lost portion of what was formerly the perineal body, (the patient being properly chloroformed) three deep perineal double wire sutures were introduced and the quill supports placed in position. The freshened surfaces were now co-apdated and secured; the parts coming together nicely into their former position. No ill effects followed the operation; the usual attentions and dressings were given and used in the after treatment of the case. On the sixth day union was sufficiently advanced to remove all the sutures. The patient remained in bed seventeen days and then arose, taking

gentle exercise. Three years later the patient reported herself completely relieved of all her former trouble; having regained the usual good health she enjoyed prior to the time of the accident, which for fifteen years had caused her much distress.

CASE 13.—Was called in consultation, early in the summer of 1879, by Prof. N. Schneider, M.D., of Cleveland, Ohio, to see a case which had twice been operated on before we saw the case, both of which attempts had proved failures. The parts implicated in the laceration involved the sphincter ani muscle, and the perineal structures. These had been so changed by the fruitless attempts to close them that it was difficult to recognize anything of the former boundaries. The patient being anxious to have the parts restored, and expressing her willingness to undergo one or more operations, if necessary, we concluded to give her the opportunity. A preparatory operation was necessary; and, for obvious reasons, the parts had to be prepared for the final closing up. This accomplished, the usual operation for re-vivifying the cicatrized parts was made; first marking out the former limits of the perineal boundaries. The first operation fulfilled all that was expected; the second one likewise; five deep silver-wire sutures of the quilled variety were used. The one through the sphincter was closed first; the stitch at the posterior fourchette next, and the intervening deep sutures in the same point of order. Four intervening superficial stitches were likewise taken, when the parts were nicely coaptated and secured; the superficial ones were single wire, and were secured by twisting. The usual carbolized dressings, with prepared oakum, were used, and the patient was visited daily, attention being given to all the required details in all such cases. On the fifth day two of the intervening deep sutures were removed. The case promised favorable termination; but some difficulty was experienced from inability to retain the stools, which delayed the union of the sphincter ani; this point had to be stimulated with Argent. nitr. On the seventh day the remaining deep sutures were likewise removed, as well as the superficial ones. The patient was confined to her bed, after the final operation, nearly three weeks, when all seemed to be well. Shortly after

this time she returned to her home, which was some distance away. As far as can be learned, through a second party, the operation was a success.

CASE 14.—Early in September, 1878, was called by Dr Moses Pardee, of South Norwalk, Conn., to repair a case of perineal laceration. The case was a primipara, æt. 19. The following is the history. During the month of April, preceding, while in the act of hanging up clothes to dry, standing on a stool, she fell upon her seat, striking a stone violently that was jutting out of the ground. She suffered for a while very severely, but made no mention of it to any of her family. After which all thoughts of the accident, passed from her mind, nor did she ever examine the parts. When the doctor was called to deliver her, labor had progressed somewhat, which not being tedious, the child was soon born. She did not complain, as far as the writer knows, of any tearing sensation during labor; but the doctor in attendance noticed something unusual, at a subsequent visit; the perineal structures looking unusually dark and tumefied, which, upon further examination, he judged to be laceration of the perineum. Three days after the accident, I examined the case, giving a very unfavorable prognosis, and for the following reasons: The patient was of a pale, flabby, leuco-phlegmatic temperament; the weather quite warm, the rent commenced at the posterior fourchette, thence extending along the raphe to and involving a portion of the sphincter ani muscle; the second tear extended from a point two-thirds of the way of the right side of the raphe, toward the gluteal region, obliquely. A space as large as the palm of an adult's hand, full size, was ecchymosed and tumefied, looking as if it were a recent bruise. This, be it remarked, was the condition, no doubt, which followed in the wake of the accident that she met with in the preceding month of April. There was also laceration of the posterior vaginal wall, nearly three inches into the septum. Operation was made in the following manner, assisted by Drs. Emily and M. Pardee. Placing the patient in the usual position, same as in lithotomy, chloroform was administered. Trimming away some suppurating shreds from the lacerated surfaces, and

as much of the tumefied and ecchymosed tissues as could be spared; five deep perineal double silver-wire sutures and three single stitches were introduced into the ruptured vaginal walls, also four superficial stitches in the perineum. The quilled lateral supports were used for the walls; the vaginal stitches were twisted and turned down, being properly protected to prevent irritation. Carbolized dressings, and the usual bandaging with prepared oakum, were used in this case; and a proper diet enforced. Daily visits and dressings were made by the doctor in attendance. I called, in company with the doctor, on the fourth day, and removed two of the deep perineal sutures; suppuration was threatening between the prepared surfaces, for which a moderately strong solution of carbolic acid and warm water was used. Leaving the case in the hands of the doctor in attendance, I did not see the patient again for about two weeks or more, when I visited her and found during this interim the parts had healed effectually; the ecchymosed and tumefied conditions had all disappeared, the parts having resumed their normal condition. In conclusion, will add that the patient had, in addition to this trouble, a malarial condition of system, which was met and relieved with the indicated remedies. The result obtained in this case far exceeded my expectations. At last accounts, the patient had regained her usual health and strength. This case is a striking illustration of what may be accomplished, under a very unpromising and adverse state of affairs.

CASE 15.—Was also called to another case, early in September, 1878; which was, like the preceding one, a primipara case, æt 27. Nothing worthy of note occurred during the process of labor; but, shortly after its conclusion, the doctor, who was the same attending physician as in Case 14, noticed a partial rupture of the perineum, which extended from the posterior fourchette and along the raphe to a point midway to the sphincter ani. I saw the case on the day after its occurrence. The patient was chloroformed, and three deep perineal sutures, single wire, were inserted; likewise two intervening superficial ones. Finding now that the parts co-adapted

nicely, the deep ones were drawn and twisted; also the superficial ones.

The usual wants of the patient were attended to, and dressings applied; after which the patient received daily attention from her attending physician.

On the sixth day the centre and posterior deep stitches were removed, and two or three days afterwards the remainder. The patient fully recovered from the effects of her mishap, with the exception of a single point near the posterior fourchette, which was probably due to a greater freedom of motion on the part of the patient, and from not observing the proper care. An offer was made to her to remedy the defect, but she persistently declined. Otherwise, our record of cases in this department of Surgery stands without a blemish or failure.

In concluding this Essay, we will take occasion to mention that all of the cases herein reported, excepting three, were instrumental deliveries. Whether due to an improper use of the instruments or not, is not within our power to judge; but we can state, without any hesitation, that in an active experience of a quarter of a century no such mishap as a ruptured perineum has ever occurred in our field of labor, from this cause. From casual observations made, however, and from information obtained from a large number of sources, we are inclined to the belief that these accidents are often due to the *too free and too early* use of the forceps. Another point noted is, that perineal ruptures are of much more frequent and common occurrence now-a-days than in former years, within our recollection. The result of our report is substantially as follows: Primipara class, six (6); Multipara, nine (9); Recent cases, eight (8); Delayed cases, nine (9); Complete lacerations, eleven (11); Incomplete lacerations, four (4); Complicated, five (5); Instrumental cases, twelve (12); Natural deliveries, three (3).

Complete recoveries, fourteen (14).

Partial recovery, one (1).

HOSPITAL GANGRENE

AND ITS

KINDRED DISEASES

IN RELATION TO THEIR

TREATMENT WITH BROMINE AND THE SULPHITE OF SODA.

GANGRENE.

AUTHORS usually divide GANGRENE, or mortification, into two divisions, parts, or stages; naming the first the *incipient stage*, or gangrene attended by sudden diminution of sensation, or feeling, in the part invaded. A livid discoloration sooner or later ensues, with detachment of the cuticle, under which a turbid fluid collects, and, upon manipulation, is felt a crackling sensation, due to the generation of gaseous products in the subcutaneous cellular tissue, accompanied by a more or less boggy feeling in the part, communicable to the sense of touch, and pressure.

The word gangrene is derived from the Latin, "*gangræna*," to gnaw, to eat—meaning a partial destruction of living tissues; a partial death, so to speak; and entitled by some writers "local asphyxia." Whatever may be the kind of gangrene, its causes are various—viz.: violent inflammation, asthenic in type; severe contusions, burns, scalds, and the application of a ligature to an important arterial trunk; strangulation of a part from tight bandaging; the obstruction of a flow of arterial blood to a part, from disease of the coats of the vessels themselves, and termed arteritis; or, by the return flow of blood through the principal veins of a part being cut off; specific poisoning of various kinds; the infiltration of an acrid and irritating fluid in a part; and a diseased state of the heart.

Again, gangrene may be *constitutional* or *local*.

Either condition, when caused by a specific inflammation of the part, from obstruction of the blood vessels, or heart dis-

ease, or from the action of specific poisons or drugs that are operating in the system, calomel, for instance, when administered in frequent or massive doses—and these are not uncommon cases—produces gangrene of the face, mouth and throat, resulting in, and technically known as “gangraenopsis.”

Gangrene often arises from causes inappreciable to us; for instance, when it occurs as an epidemic. The works of Seibert, an ancient writer, as early as the eleventh century, reveal to us epidemics, termed in those days “pestilences,” which appeared in the western part of Lorraine, in France. To use the writer’s own words: “*Many persons became putrid and died in consequence of their inward parts being consumed by St. Anthony’s fire,*” as it was styled then, but now known as erysipelas. The writer continues: “*others lost their limbs and recovered, and still others were afflicted with permanent contraction of their sinews.*”

Various epidemics have visited France and Germany, from A.D. 1500 to the present century, traced to the free use of ergot, or spurred rye, eaten in the bread, which the people of the latter-named country partake of largely. As an additional and almost inappreciable cause of gangrene, may be mentioned the transfixion of an important arterial trunk by a spicula of bone in case of fracture. During the war of the late rebellion, (1861 to 1864,) investigations were instituted in some of the Government military hospitals relative to the treatment of hospital gangrene, and likewise other affections that appeared in conjunction with, and may be denominated as kindred to gangrene. These kindred diseases are *erysipelas ichorrhæmia*, *thrombus*, *metastatic abscesses*, (pyæmia,) *diphtheria*, and *scarlatina gangrenosa*. The principal object in view was to ascertain the exciting causes, the manner of their operation in the production of these most formidable affections, especially when allied with gangrene; also the nature of the process, or means, set in motion, together with the prophylactic agents best adapted for the arresting and curing of these maladies.

Vast, and almost innumerable, were the opportunities offered in our military hospitals for the study of the diseases referred to; more especially was this the case in regard to gangrene, pyæmia, or erysipelas.

Diphtheria and scarlatina were isolated and few in number, and were only occasionally found as accidental complications. Sufficient, however, was observed to warrant the belief finally arrived at, and, I believe, concurred in by all who took an active part in these investigations, viz:—

That hospital gangrene, erysipelas, pyaemia, gangrenous diphtheria, and scarlatina maligna, viewed as local diseases, present, on close observation and careful analogy, many points of resemblance; and that they likewise bear a close similarity in their constitutional aspects. These similes are very striking, and will be seen as we proceed.

For instance: In *diphtheria* the transformation of the membranous formation, or exudation, into diffuent pulp; the irritating effect of the erosive sero purulent fluid upon contiguous and neighboring structures, abrading and excoriating wherever it touches the skin, and mucous membrane alike.

In *scarlatina*, sloughing, or ulceration, a constant accompaniment, which also exudes or throws off sero-purulent discharges; and a disgusting and offensive foetid odor.

Now hospital gangrene invariably evolves a *pungent, putrid odor*, exudes thin, acrid, sero-purulent pus, likewise corroding and searing over the tegumental surfaces, wherever it overflows the boundaries of the slough.

Need I add that when erysipelas runs on to destruction of the cellular tissue, it is attended with similar phenomena.

Erysipelas and *hospital gangrene* are likewise allied in many of their clinical aspects; apparently they may be dissimilar, but, by a careful comparison, there will be found points of similarity, as well as those of dissimilarity. The attentive observer cannot fail to be convinced of this.

Let us now proceed to compare the two diseases.

ERYSIPELAS.

1. Invades skin, cellular planes (known as succulent tissues).
2. Does not readily involve tendons, bone, fascia, etc. (dry tissues).
3. Attacks and extends along the skin

GANGRENE.

1. Attacks the integuments and cellular planes likewise (succulent tissues).
2. Will not readily attack tendons, bone, fascia, etc., and, I might add, blood-vessels.
3. Attacks and extends along the

ERYSIPELAS.

and cellular planes, seeming to possess a strong affinity for such tissues.

4. In the cellular form, presents necrosies, or death of cellular substance, in the form of diffuent sloughs.

5. When attended with necrosis of the cellular tissues, exudes an acrid, corrosive fluid, peculiar to the phlegmonous variety, which contains no pus, nor other cells. The constituents of this fluid seem to be fine granular debris, or granular matter, the residue of what was formerly tissue (inelastic fibrous tissue).

6. In the cellular form there are putrid odors emitted.

7. Is both infectious and contagious.

8. Is frequently complicated with thrombus and blood clots.

9. Leads occasionally to ichorrhæmia, or blood poisoning.

10. Is producible by inoculation, with putrefying animal matter.

11. It arises spontaneously in overcrowded and illy-ventilated Hospital wards.

12. Attacks generally vitiated and depressed constitutions; and in these are most destructive in its tendency.

13. The treatment required, stimulating, both local and constitutional, with generous diet.

14. When death ensues the animal tissues pass rapidly and generally into a state of putrefaction.

GANGRENE.

tégumentary and cellular planes rapidly.

4. In all the structures which it attacks, presents constantly diffuent sloughs, except in bone.

5. Exudes corrosive, thin, sero-purulent fluid, excoriating the integument contiguous to it, or where it overflows. The yellowish fluid which can be pressed out of gangrenous sloughs and ulcers, contains no pus or organized cells. The constituents seem to be fine debris, or granular matter, the debris of connective tissue, and a few inelastic fibrous shreds.

6. Likewise emits putrid odors.

7. Likewise infectious and contagious.

8. Is frequently accompanied with thrombus.

9. Leads almost invariably to ichorrhæmia, unless promptly arrested.

10. Is producible by inoculation, with putrefying animal matter, as well as by some of the gaseous products of putrefaction.

11. Arises from the profluvia of illy-ventilated, over-crowded apartments of Hospitals.

12. Occurs mostly in broken down and depressed constitutions, in which it proves most destructive in its tendency.

13. Treatment required—stimulating, both constitutional and local, with a generous diet.

14. Passes into a state of rapid putrefaction even before death is complete, or the body grows cold.

In the present state of medical knowledge, we are disposed to regard the local evidences of erysipelas, of scarlatina, and diphtheria, to be preceded by, and depending on, certain blood conditions—*i. e.*, "*blood poisoning.*" In this respect, there is

some noticeable resemblance. All three of these diseases appear to have the same characteristic location—viz., the tegumentary surfaces, or planes. Erysipelas is not unfrequently a complication of diphtheria and scarlatina. Both of these diseases are adynamic, or prostrating diseases, and present to chemical examination analogous changes in the blood.

As to the causes that operate to produce erysipelas, thus far we know: Erysipelas is often the product or result of dissecting wounds—of wounds received in killing and dressing diseased cattle, or the putrefying carcasses of those killed by violence or accident. It is also known to occur in the form of puerperal fever, (peritonitis,) from infection conveyed through the hand of the midwife, as is well known in Europe and America. Often is it associated with severe and crushing injuries of the joints, and diseases of bone; especially is this the case in regard to caries, or ulceration, and necrosis, or death of the bone—diseases remarkable for the persistent and fœtid odor, which accompanies all such discharges.

In fact, all that is known thus far, and can be said, with regard to the artificial production of erysipelas, may be summed up in a few words—viz.: *It is the agency or product of putrefying and decomposed animal matter.*

Erysipelas, likewise, seems to be engendered in crowded and ill-ventilated apartments, reeking with the foul effluvia emanating from the human body; in hospital wards, poisoned with the exhalations from imperfect drains and cess-pools, especially from the former. It may also be traced to the miasm emanating from the bodies of those afflicted with the disease. The bodies of those who are afflicted with erysipelas in some of its worst forms, (malignant,) and especially when epidemic, it is a well-known fact, emit offensive and putrid odors. The remains of those who die from it, as before remarked, pass speedily into a state of putrefaction.

Search then as closely as we may, we will find the entire weight of the testimony goes to prove, most conclusively, that erysipelalous diseases are, more or less, intimately connected with *putrefactive processes*; and while it may not be possible, in our present state of medical knowledge, to establish the precise

relationship between erysipelas and gangrene, enough is known to make it certain that a most intimate connection exists between the two.

Of the causes that operate to originate and produce hospital gangrene, so far we know: It arises in overcrowded wards, where the wounded are collected, and where the apartments are poisoned and the air impregnated with the stench of profluvia from traumatic causes, and probably where the impurities of cellars and sewers pervade the air. It is also producible by inoculation; and there are very strong reasons for asserting that gangrene can be produced by keeping the putrid flesh of animals, that died in health, in proximity to the surface of an open and healthy wound. The poison spreads rapidly through the medium of the air, and adheres with great tenacity to fomites—such as bedding and clothing of a woolen nature.

But little is yet accurately known as to the precise method by which the agents originate and produce erysipelas and hospital gangrene.

Waiving all considerations as to its identity and personality, it seems to—and, indeed, does—operate through the medium of the atmosphere. According to traditional views, it gains access to the system or blood by being "*breathed in.*" This, although a popular and received theory by many, yet needs a closer investigation, for there are some facts (which will be observed as we proceed) that seem to militate against this much-received view of the question.

The facts in the case are simply these: It will be noted, by such as are careful observers, that those who are recovering from erysipelas, say, for instance, of the face, or the scalp, are, after desquamation of the part attacked, peculiarly liable to fresh attacks, when re-exposed to the effluvia or miasm in affected wards of hospitals, or apartments; and that this liability to the malady can be prevented by coating over the part with tincture of iodine, which process, as is well known, detaches the epithelial layer of skin. The same immunity may be induced by repeated embrocations with glycerine, and keeping the parts, more or less, continually moistened during the exposure. Castor oil, collodion and cerate, or most any oleagi-

nous material, will do the same, so long as the pores of the skin are kept sealed with it.

Moreover if the accepted theory is correct that erysipelas acts from, and through, the medium of the blood; it is very difficult to comprehend why it so constantly selects the face and backs of the hands as the points of original invasion; and yet having commenced on the face, extends to the neck, hairy scalp, underneath the beard, and over the shoulders and thorax. Any part of the tegumentary surface exposed to the atmosphere, and not protected by hair, may be invaded by erysipelas; while those parts covered with clothing are attacked only in case there is an ulcer, wound or abrasion, located there, and exposed, at some time, to the influence. If a man has caries, necrosis, or hospital gangrene—in fact, any disease commonly associated or akin to erysipelas—the latter attacks the skin at the site of the original disease.

A morbid agent, operating in the blood, is said to attack those tissues, or parts, of the body which have a supposed affinity for the poison—a susceptibility or sensitiveness to it. As an instance, let us regard these facts;—*secale cornutum* impresses the uterus; phosphorus the lower jaw; mercury the gums, teeth and bones of the face, and liver; nitrate of silver the skin and kidneys; belladonna and opium the brain; but it is not positively known that any producible disease or condition of these organs renders them any more sensitive to the matter circulating in the blood. The precipitation of the silver upon the skin, or particular tissue, seems to depend upon original and physiological endowments of the parts; and this same remark applies to the other remedies named.

Let us now consider how it is with the virus, or poison, of erysipelas. The theory runs thus: The virus, miasm, infection, or whatever it may be termed, enters the blood through the medium of the air breathed in, and by a sort of process which we will term "*elective affinity*;" it attacks the skin of the face, and respects the skin of all other portions of the body, meaning, of course, as points of original invasion.

True it is that, beginning in the face, it may spread to other parts, by continuity of surface, but idiopathic erysipelas rarely

begins at any other point, except under certain conditions which will now be mentioned.

Let a woman give birth to a child, and, while in the parturient state, bring her in contact, or let her be exposed to the infection, and forthwith she will get puerperal peritonitis.

Now the question may be asked, "What is the pathological condition of the parturient woman, precisely co-eval with the period in which she is liable to the invasion of erysipelas?" The answer is simply this: The interior of her uterus, may be likened unto a surface of skin stripped of its epithelial covering. When reproduced, (and it is not until the close of the second month after delivery that this occurs,) and the parts are restored again, she is no longer any more liable to the invasion of erysipelas than she was before becoming pregnant.

But suppose a hundred, or two, of men are exposed to the infection of erysipelas, those who take the disease will almost invariably have erysipelas of the face; the disease will locate on the eye-lids, alæ of the nose, and even behind the ears—the integument in these localities, let it be noted here, being very thin and tender. It does not readily attack the surfaces of the upper or lower extremities, as already stated, unless, indeed, the person be suffering with injury, or an abrasion of some kind, which part is exposed to the same influence. This process may, as a rule, be taken as a guide. But it is likewise true that wounded men are, at times, attacked in the face with erysipelas, while the abraded or wounded parts may escape; and, after the malady has run its course in the face, the injured parts have become subsequently involved.

The accepted theory then, is that in idiopathic erysipelas the disease begins on the face, and the only exception is in the case of parturient women and young children and infants. These latter are attacked with erysipelas on the extremities quite as often as on the face; but this liability is confined only to the period of early childhood, and for obvious reasons—the skin of the entire body being very tender at that period.

It is well known, and among the profession particularly, that those who have had erysipelas on the face are exceedingly liable to fresh attacks during the period of desquama-

tion, and how readily these attacks may be averted by repeated applications of some simple unguent, tinct. of iodine, etc.

Again, how common a circumstance it is (and no doubt experienced in the circuit of every surgeon), in cases of severe injuries of a crushing nature, particularly when an important joint is involved, for erysipelas to develop in the injured part, and this, too, when no endemic, or epidemic, influences are at hand.

Let us go a step further in our argument. It is a noted fact that all the known blood-poisons, all foreign substances that tend to precipitation in certain parts of the body, or elimination by certain organs, will seek—if the habitual destiny of the substance is interfered with—vicarious locations.

Uric acid, for instance, in gout, tends to certain parts—for example, the joints. Now if the deposition of uric acid, or its compounds, at the joints, is interfered with, forthwith the acid seeks another locality. If the agent that produces rheumatism is forced from its resting-place, it at once seeks another locality. If bone earths, re-dissolving in certain diseases, fail in being eliminated, or thrown off, by and through the kidneys, they are then deposited in other localities or organs—for instance, in the lung substance and coats of the stomach. No local treatment for gout or rheumatism dislodges or cures the disease; the utmost hope of topical, or local, applications is palliation of pain, or, it might be, of the local, pathological condition. The agents herein acting, and that have been referred to, are known and recognized as “blood-poisons.” The local affection persists, because of the continuous and persistent action of the morbid agents operating from *within*, and thus producing these affections. With the drying-up of the fountain-head)the sources from which these poisons emanate and flow (the local diseases will be in the same ratio removed—in fact, cured—and all remedial measures should, therefore, be applied with a strict regard to the accomplishment of this end.

On the other hand, the records of our military and civil hospitals, as well as the experience of numbers of private practitioners, show conclusively that erysipelas may be checked, or interrupted, at any point or stage in its proceedings or devel-

opments, and that such interference does not produce any metastasis. Neither are the constitutional states, nor symptoms, aggravated thereby; but, on the contrary, it will be found that, in the ratio with which the local symptoms are dispelled, the constitutional symptoms will vanish with it. This same remark holds good in regard to gangrene, as can be proved in hundreds of instances.

It has also been asserted, and with a considerable appearance of truth, that the same rule holds good, in erysipelas and gangrene, as in what are known as inoculable diseases: vaccination, hydrophobia, etc.—when the virus has been aborted.

In vaccination, we find a period of incubation of some four days; at the expiration of this time, there is some appearance of an elevation of the skin, but no redness: this is the period known as infiltration. After the fourth or fifth day inflammation sets in, and, co-incidentally, the accompanying symptomatic fever. We will suppose now, that, at this precise period, the vaccinia is aborted, or interrupted—it may be by an accidental brush of the hand or clothing, or a scratch of the finger-nail—the constitutional state falls, and is destroyed; nor is the protective agency of the vaccination yet developed. May it not then be possible that the virus of erysipelas acts in the same way?—that there properly belongs to erysipelas a period of local incubation—zymosis, so to speak, (a passing from without inwards)—corresponding to the period of infiltration in vaccination? Following this point, redness and inflammation are developed. The constitutional infection may be produced at any period intervening between the first contact of the infectious material, and the development of the local process, full as well as after inflammatory symptoms are developed.

If the ancient dogma is founded and based on truth, and if the virus of erysipelas finds its way into the blood, and, by virtue of hypothetical affinities, forces and precipitates itself upon the skin of the face—as nitrate of silver does upon the entire surface of the body, as ergot does upon the uterus, or belladonna upon the brain—we have to assume (in order to make this theory coherent) that wounds endow the skin of the extremities with another and new order of affinities; that

the puerperal state of the uterus endows it and the peritoneum with an entirely new order of sensibilities; that the skin of the legs of infants has affinities that disappear with age; that the coating of the skin of the face with grease, iodine, glycerine, etc., destroys its affinities; and all this in the face of the fact that wounds—the puerperal state—age and protection are not known to have influences upon these affinities, or local sensibilities, in connection with measles, scarlatina, small-pox, or any other infectious disease of the skin.

Do not these facts make it appear that the contagion of erysipelas is rather by *direct contact* with the skin?—that the virus, or miasm, floating in the air attacks the skin of the face, because that is the part most exposed and uncovered; that this is the part most frequently invaded, because of its epithelium being thinner; even more so than that covering the back of the hands? Then, too, the vessels of the face lie more superficial; the alæ of the nose, the eye-lids and back of the ears, are more susceptible than the cheeks, etc., for the reasons already stated; and it avoids those parts of the hands and feet, on which the epithelium is much thicker and denser. Who ever heard of erysipelas *primarily* attacking the unwounded palm of the hand, or sole of the foot?

Is it not reasonable to assume that desquamation of the skin, or its division by a wound or ulceration, and the exfoliation of the maternal surface of the womb, opens up the parts to the influences of the contagion, and thus renders these surfaces more susceptible; just as the same condition would open the parts to the action of medicinal local applications?

And is it not reasonable to assume that the constant exposure of the child's legs to the open air—or possibly the fact that, in the child's body, there are not yet developed those differences in the thickness and susceptibility of the epidermis, which are obtained later in life—permits the contagion to act with equal force upon different parts of the body?—that the protection (with the agents named) of the tender and delicately-covered skin, just recovering from erysipelas of the face, may prevent the action of the contagion, and thus impart to, or bestow upon the patient immunity from relapses?

"*En passant*," let me add, that parts once invaded with this malady scarce ever escape a relapse, unless protected in some way.

In all that the writer has herein advanced, he does not claim the complete overthrow and downfall of the old dogma of the *breathing into the blood* the poison, or miasm; but he is of the opinion that the considerations herein urged, as well as the records of the past few years, present sufficient grounds to stimulate thinking minds in the profession to a close re-investigation of the old, (but to his mind,) unscientific and perhaps mistaken theory. These observations—supported as they are by records obtained practically during the War of the Rebellion of 1861 to '64, as well as other statistics—show plainly that the increasing gravamen of many diseases, supposed to originate in blood infections, is due rather to retro-active influences of the *parts locally*, than to an increasing quantity or intensity, or to a growing development of the original blood poisons.

PYÆMIA is the next in order of importance, as a kindred affection to gangrene. The word is derived from the Greek, *pyo*, pus; and *ema*, blood—signifying pus in blood, an alteration and poisoning of the blood. Like many other medical terms, this one may be classed among the misnomers. Pus, in substance, never reaches the blood, but ichor may; therefore, the term ichorrhæmia, or even septicæmia, would be more appropriate—the former, as its name indicates, implying the presence of ichor in the blood, and the latter a septic poisoning of the blood. These two terms are from the Greek, and may be said to be synonymous.

Writers have divided pyæmia into two stages or conditions; 1st: A state which they designate ichorrhous infection, or ichorrhæmia—the condition pronounced commonly when fully developed, and will be recognized by frequent rigors or chills, feeble pulse, loss of appetite, colliquative and exhaustive sweats, local in their nature; a fermentive and sweet odor of the breath, palor of the lips and face, and marked physical and nervous prostration. 2d stage: Metastatic abscesses and inflammations, produced by the softening of thrombi, or blood cysts, previously formed.

The first of these conditions, or *ichorrhæmia*, is the constitutional state, and develops with the most surprising rapidity, and quickly leads to fatal results; frequently a result of gangrene, with extensive injuries, especially those involving bone. The state termed "thrombus" is often associated with ichorrhæmia, both of which processes—the ichorrhæmic and thrombic (otherwise termed pyæmic)—are connected occasionally—in fact, it might be added, frequently—with the more serious local effects of erysipelas, such, for instance, as abscesses and sloughing of the cellular tissue.

On the other hand, erysipelas and hospital gangrene are not necessarily followed by ichorrhæmia; still there are few cases, that are fully advanced and developed, in which there is not more or less of it. This ichorous infection appears to be dependent on the presence of putrid substances or fluids in the wound; in suppurating cavities and sloughing wounds, as well as upon gangrenous surfaces. A majority of a given number of cases will show that constant correspondence, or relationship, exists between fœtid discharges and ichorous infections. In a large number of cases, carefully recorded, it has been observed that the discharges were fœtid *prior* to the development of the first symptoms of ichorous infection, or constitutional disturbance. Ichorous infection, it was noticed, does not always follow upon the presence of fœtor in the discharges, but ichorous infection of the blood never occurs where the discharges are not fœtid; in other words, the latter could not possibly exist without the former having preceded it. Not only is this the case, but, furthermore, it will be invariably noticed, that, as soon as the fœtor is corrected in the wounds or slough itself, the constitutional symptoms of ichorous infection, or poisoning, begin to disappear, and that, too, with a rapidity that is astonishing.

Again, it will be seen, that relapses take place; and that these are always co-incident with a return of fœtor in the wound. The constant co-relation that is invariably found to exist between the product of infection and the ulcerating and sloughing part, and the constant precedence of the latter in point of time; the constant disappearance of the former upon the correction

of the latter, establishes unequivocally the intimate connection between the two; *i. e.*, the presence of fœtor, in the wound, and the symptoms of poisoning of the constitution.

What the peculiar substance is that forces its way into the blood, and gives rise, either directly or indirectly, to the ichorous poisoning, as yet we do not know definitely. One point, however, we are well and thoroughly acquainted with, *viz.*, that it is developed only during the putrefactive process, or decomposition of animal matter or tissue. This is made to appear from facts collated from practical experience. Furthermore that the discharge is not pus, in its cells, that finds its way into the blood, but rather that it is a fluid, or dissolved in a fluid, of a foetid ichorous character.

Ichorrhæmia then, as already stated, occurs only in cases in which the process of fœtor, or ichor, is going on; the power of the agent, or active principle—if such a term is allowable—disappears upon the arrest of putrefaction in the wound; the influence of the same agent is destroyed by, and succumbs to, the material or substance that possesses the power of neutralizing and arresting putrefaction. Much empiricism has been resorted to in the endeavor to arrest these maladies, and all we know of this treatment may be summed up as follows:

1st. In *erysipelas*, the topical applications hitherto and mostly used have been iodine, (in the form of tincture,) creosote, sulphur, argent nitricum, muriated tincture of iron, etc. These substances, as regards their active properties, are very diverse. Wherein, let me ask, does creosote resemble iron or iodine? They agree only in that they are anti-septics—*i. e.*, possessing the power to arrest putrefaction.

2d. *Hospital gangrene*: The local remedies most commonly used, after long years of disheartening experience, are acid nitrate of mercury, chlorate of soda, arsenical solutions, nitric acid, and the actual cautery. These are all anti-septics, at least so-called, and they agree in so far that they break up, or arrest, the putrefactive action, directly or otherwise.

3d. *Pyæmia*: The agents found to be most useful in this most formidable of all these maladies, are free openings, and complete drainage, at most dependent points, together with

great cleanliness and care. Some use has been made of chlorinated water and hyposulphite of soda, (in the form of injections,) and of iodine, upon the parts most affected. These look in the same direction: on the one hand, cleanliness, and depending openings, and drainage tubes, look to an easy, free and rapid removal of the discharges; and on the other hand, iodine, and chlorinated water, and the sulphites, to the arrest of putrefaction in animal matter. Does it not seem singular that in the slow and gradual growth of empirical medicine, that one remedy after another, selected by guess-work, or by purely experimental processes, and not under the domination of any theory as to the disease in question, should be found side by side, and in common use; and that those remedies, however diverse in other respects, should be found to agree with perfect uniformity in one common quality, unless that one quality had some relation to the special nature of the diseases, or the causes of their production?

It may be that the putrid process (or, at least, some of its associate products) exercises a counteracting or antidotal influence in the production of the local processes, and that the putrid fluids, passing into the circulation, exercise a direct and controlling poisonous influence, or possibly set up in the blood similar processes as are going on in the wounded or putrefying cavity. It is probable—for the results thus far obtained point in this direction—that peculiar alkaloids are produced in putrefactive decomposition, and that one or more of these are the active agents. Whatever these agents are, they exist more or less in all kinds of animal matter undergoing putrescence.

Early in the fall of 1872, a series of investigations were instituted in some of our Government military hospitals, having in view the discovery, if any existed, of the essential agent which causes these diseases.

After careful, patient and extended investigation, and a general summing-up of results by such as were engaged in the arduous task of determining the agent, or force, directly concerned in the production of blood poisoning, the following are some of the principal points and deductions arrived at.

1st. That the force or agent here at work is not the final

product of putrefactive fermentation; the final product of putrefactive fermentation differs from the initial and mediate products. Again, in like manner—according to the conditions of moisture, heat and access of air—we have, as a result, putrefaction setting in, with different phenomena and products. Who has failed to observe the differing results from the decomposition which takes place in the ordinary process of maceration, in the cadavar, enclosed in a metallic coffin, and from one that is openly exposed to the hot rays of the sun.

2d. That the agent producing this affection will be found to be generated most freely in the incipient stage of putrefaction. This point can be readily tested by the results obtained in the experimental injection of putrescent animal matter into the veins of live and healthy animals.

Solutions of putrid pus which do not evolve *ammoniacal* odors, or products, freely and commonly give rise to, and produce, a group of symptoms allied to ichorhæmia; while solutions of highly-poisoned and ammoniacal matter commonly produce death in a very brief space of time, engendering gangrene, putrid diarrhœa, and a condition allied to ammoniæmia. This term is applied, and the theory borne out, by no less a writer than the celebrated pathologist Virchow.

The discharges and gangrenous pulp noticed as connected with ichorrhæmia, had an acid reaction, always becoming evolved, or thrown off, and disappearing, on keeping the specimen until ammonia was freely developed. The difference in the terminal symptoms seemed to have some relation to the physical character of the putrefied substance; thus, the more readily did the constitutional symptoms seem to be produced; the more coherent—*i. e.*, the drier the product—in the same ratio did the effects appear in local processes.

In regard to the directly appreciable effects of the gangrenous substance—by some denominated “putrilage” of hospital gangrene—the following results were obtained: The first effect of the virus, or poison, is to coagulate the blood in its vessels on, or adjacent to, the point or surface to which it was applied. This power of coagulation manifests itself sometimes in the blood of large and thin-walled veins—seldom in the

large arterial branches. A few instances have been observed in which the saphena and femoral veins, and their branches, have been implicated in the progress of gangrenous underminings and chasms; but in all such cases, it was noticed, that the process was tardy, and that the first change occurring was the coagulation of the blood in the vessel. Again—in a few cases—though the sheath of the vein was destroyed, and the latter exposed, yet the vein itself was not destroyed. To the sense of touch and feeling, in every case, it was found to be hard and whip-cord like; the induration was found to commence, and was firmest at the distal end of the vessel, as it lay exposed in the chasm. This condition was traceable beyond the cardiac end, in view, and thus a considerable section of the vessel was embraced, as it were, in the destruction process. The writer once observed this condition in a case of extensive gangrene of the inner, or femoral, side of the right thigh, in which some seven inches of the femoral vein was thus implicated; the section afterward sloughing out, leaving the parts to be sustained by collateral circulation. The hemorrhages that accompany this disease are invariably arterial, the coagulating power of the virus being noticed in thin-walled and deep-seated veins, more than elsewhere. In the small veins, it was noted, that coagulation was complete, while in the larger veins the blood presented the appearance of increasing thrombus. Further—the thrombi, which were found to be formed in the large veins, seemed to originate at the point where the gangrenous cavities came nearest in contact with the vein, and the thrombus appeared to start a little toward the heart. Observations, however, have not been sufficiently numerous on this point to warrant the promulgation of this feature as an established and accepted fact, but they certainly tend that way.

The fluid parts of the putrid and poisoning properties appear to flow into the cellular planes; seeming to possess an affinity, as it were, for this tissue where it engenders a sort of gangrenous liquefaction. This was noted, in repeated instances, in which large acreage of integument, embracing many square inches of surfaces, was in this condition of liquefaction, while the over-

lying tegumentary structures gave forth no indication of the havoc transpiring beneath. The extent of this destruction could only be determined by free and bold incisions, in some cases, to the extent of ten to twelve inches, in a direct line. The affected parts thus bared, the muscles, tendons, vessels, etc., could be clearly discerned,—dissected out, as it were—as if done by the anatomist's knife, for demonstration. The writer can call to mind whole groups of muscles and contiguous structures, in the femoral and cervical regions, thus undermined, and only exposed to view by free incisions.

In such cases, the cellular planes, throughout great districts, were noticed to take on a yellowish appearance, losing its coherency, and, in the more advanced stages, breaking down into a putrid, yellowish fluid. Under the microscope, this fluid presents the appearance of fine granular debris, entirely devoid of any cell structure, and contains threads and shreds of inelastic fibrous tissue. This change in the cellular tissue, when finally completed, accumulates in such quantities as to flow from one region to another; leaving the tegumentary structures, as before noted, undermined and shelving; emitting, (as it will then appear,) upon manipulation, a kind of gurgling sound.

As this condition advances still further, the skin turns pale, and does not become thickened and indurated, as in facial erysipelas. Next, a livid condition is apparent at different points, and finally the skin becomes necrotic, or carious—*i. e.*, dies, or ulcerates. The ravages of the disease now extend in every conceivable direction, but principally downwards and between the muscles. In exceptional cases, and where the recuperative powers are good, small, flocculent sloughs are thrown out, yet of the same offensive, putrid, serous-looking nature already spoken of. Accompanying this condition of affairs, the following symptoms will be noted: chills, small and frequent pulse (ranging as high as 140 to 150 pulsations to the minute); dry, pungent and hot skin, of a dark yellow, or dusky hue; red and dry tongue; unquenchable thirst; frequent, labored and superficial respirations (50 to 60 to the minute); hebitude; hacking cough at times; singultus; sopar and de-

lirium; emaciation; occasional subsultus; and death closes the scene. These symptoms also answer to the so-called phlegmonous erysipelas, and differ from the circumscribed abscesses so common in the eye-lids of facial erysipelas.

In addition to the influences exerted by the virus upon the blood contained in the vessels, it also starts in the tissues (with which it comes in contact) the putrefying process; no transitional state of the tissues touched has yet been observed.

The gangrenous and living parts are so shaded and blended, one with the other, and so identified do they become, that it is often difficult to determine where the living tissue begins, and the dead ends.

The invaded tissue melts and breaks down into a state of deliquescence, as it were; but this step is not progressive, as the older portions of the sloughs do not appear to be any softer than those newly or primarily forming. Some of the elements of this broken-down tissue seems to furnish a dirty, yellowish fluid, which can be readily pressed out from the adhering portions, and contains no corpuscles, or other organizable material; is not separable; has not serum, as in the other case, floating on the surface; nor does it gather any sediment upon being left to stand. In fact, it has not any of the properties of pus, except its fluidity and color. Pus corpuscles, or any other organized material, have never yet been discovered in the discharges of a gangrenous slough, unless taken from some point where granulation was going on. From all that can be gathered and seen, the parts are destroyed pretty much, in fact, in the same manner or form as occurs from poisonous virus, or miasm, developed in the course of a series of pathologico-chemical actions, which may be expressed in the generic term of "*putrefaction*." (Here we will take occasion to remark, that the experience of the past fifteen years has strengthened and confirmed the foregoing observations.)

Stimulated with these ideas, the minds of several in the medical department of our army (the writer among the number) became engaged in special efforts,—during the Civil War of the Southern Rebellion,—having for their object the discovery of an agent possessing the power of arresting putre-

faction, and also of destroying its products in whatsoever form they might present themselves—whether of gaseous fluid, or a solid nature.

The extreme paucity at the time of any accurate knowledge of the putrefactive processes, proved a great barrier to the attainment of our wishes; and although the results arrived at were of marked practical value, still very little light was afforded, pathologically speaking.

As we glance over the list of agents that has been in use in gangrenous affections, we will find that the actual cautery and corrosive acids have been the most potent weapons used to arrest the destructive tendency of this direful scourge, that decimated our ranks. In their use, these involve a large amount of living tissue, and are therefore only applicable upon superficial and open surfaces. The operation is limited to the charring over of the parts. None of these last-named agents can be introduced with safety into deep gangrenous sloughs, or chasms.

Suffice it to say, that one and all of these remedies have failed to answer the desired purpose fully.

Much attention, at the time referred to, was being attracted toward the Halogenous remedies—remedies that contain iodine, chlorine, fluorine and bromine: these are well-known halogens, These substances are all very similar, and act very much alike, differing mainly in intensity and degree. They, however, differ in their physical properties. Fluorine cannot be used as an isolated remedy, or material, on account of its violent and ravenous activity. Chlorine cannot well be obtained pure, except in form of a gas, or as fluid only under considerable pressure; independent of all this, solutions of chlorine are too feeble in their action. Iodine cannot be had in a state of gas, at an ordinary temperature, and cannot be employed either in a solid or fluid state (unless much diluted) to possess the necessary force. Bromine can be obtained in a fluid form, vaporable at any ordinary temperature, and, unlike chlorine, is respirable in this condition, without injury or much inconvenience.

Researches had been (prior to this period) made by the late Prof. Brainard, of Chicago, that went to prove that iodine mixed

with the virus of the rattlesnake neutralizes and destroys its power; and also showed it to possess the same power over other animal poisons. These experiments afforded valuable hints, and appeared to promise some results, and accordingly were acted upon. Reasoning from these hints derived from Prof. Brainard's experiments, that there is an antagonism existing between the halogens and the poison of reptiles and of animals—the inference was reasonable that such a remedy in the form of gas would be a direct antagonist to animal poisons, in the form of vapor.

The same rule, it is well known, holds good in relation to chlorine; but the great objection to this agent is, that even minute quantities of this article render the surrounding air irrespirable, and even suffocating, which, of course, would preclude the possibility of its use in the sick chamber, or even hospital wards.

Bromine was then settled upon, and selected for trial. The first case it was applied to was one of gangrenous erysipelas, and it here met the most sanguine expectations of such as were testing it. Subsequent reports and records, from every point at which this remedy was tested, proved its unquestioned superiority and efficacy (as far as results were concerned) over any other known substance; and the death rates were most wonderfully reduced. Investigations were also made in regard to its value in pyæmia; not only as a therapeutic, but also a preventive or prophylactic agent; and here again equally satisfactory results ensued. More important, in fact, were the experiments, in this instance, on account of the greater frequency and insidiousness of this peculiar malady.

Hospital Gangrene presents more or less constancy in many of its characteristics, and has a tendency, usually, to assume more or less of a circular form, being only interrupted or altered by the varying effect of the remedy locally used.

When the integument is not undermined, the disease is generally arrested; the remaining ulcer presents then the same form; but if it so happens, through want of thorough application of the agent or other cause, that the disease is arrested at one point and not at another, this circular form is de-

parted from. There were many instances observed in which the gangrene attacked penetration gun-shot wounds; in which event the part would present itself as a sloughing core, of a pulpy nature, which would protrude at both entrance and exit of the wound.

Gangrene is influenced in its ravages by the succulent nature of the tissue—seeking out (as it always appears to do,) the cellular tissue; and this it will do, with unerring certainty, particularly if there exists an abrasion or solution of continuity of the tegumentary structures. If not arrested here, the muscular structures become next involved. Dense fascia and tendons resist its influences even longer than bone. Gangrenous sloughs vary in consistency; while some are tolerably firm, others again are pulpy and soft—depending much upon the tissue involved. For example, cellular tissue, under its ravages, becomes rapidly soft and flocculent, yielding in abundant quantities a dirty, yellow fluid, of a peculiar, pungent, foetid odor. In some cases in which the ravages were slower, the skin, cellular tissue and muscles, appeared to become simultaneously involved; these seemed to break down—melt, as it were—into diffuent matter; the product of each of these several structures being one and the same; no one tissue being recognizable in the destruction and debris left. The odor of gangrene is very peculiar, better imagined than described; when once experienced, never forgotten. It is exceedingly pungent and intolerable; so marked is its former quality that the lining membrane of the nose and the conjunctival membrane of the eyes of the operator, are irritated and reddened to such a degree as to oblige him to desist, at times, from his duty. Under the microscope the gangrenous products, discharges and sloughs, are found to consist chiefly of granular matter containing shreds of inelastic fibrous tissue; other structures, undergoing metamorphosis, are gradually lost.

Gangrene may invade any point in the body where a partial or complete solution of continuity of surface exists. Instances were noted in which it has attacked wounds almost entirely healed. One of the most extensive and destructive instance of gangrene that came under the writer's observation, during

the war, was that of a large, robust looking, muscular man, who had a slight abrasion, from a glance shot of a musket ball, near the left nipple. Gangrene invaded it in less than thirty-six hours after his entry into the Hospital. (Satterlee General Hospital, located at West Philadelphia.) It invaded and sloughed out the entire left breast, involving the pectoral muscles (which in this case were very large) before it could be arrested. The cellular tissue was also very abundant here; upwards of seven ribs were exposed when the mass separated; it weighed over three pounds. The patient, however, made a good recovery.

The state of the constitution at the time of invasion, or, in fact, prior to this period, does not seem to have much influence upon the liability to the disease; for it seems to attack the old and the young—the feeble and the strong—the sick and convalescent, alike. Neither has it been found to have travelled with any more rapidity in those of depraved habits than those of sound health. The condition of health has, however, much influence in the process of repair. In those of previously vigorous habit of body, the granulations start up more rapidly; and after the disease has been arrested, convalescence then sets in more rapidly. Usually those who are affected express a disgust and repugnance for food; the nervous system is much disturbed; there follows dullness, despondency and insomnia—or a great restlessness; great muscular prostration; subsultus tendinum; colliquative sweats and a saccharine odor of the breath; this latter symptom is strongly marked when pyæmia declares itself. The surface of a gangrenous slough is not painful, sensitive, nor yet irritable.

None of the applications of the agents mentioned in connection with treatment are painful, unless applied to living tissue. When bromine is used, the patient complains of a sort of gnawing, biting, or stinging pain. This condition of sensitiveness may be always regarded as favorable than otherwise.

Constitutional remedies, unaided by local means, do not appear to have any marked influence over the local and general condition of the disease. It will be noticed, invariably, that the constitutional symptoms will abate and pass away just in

the same ratio as the local ravages are controlled; convalescence begins as soon as putrefaction is thoroughly arrested; there appears, in truth, to be a concert of action between the arrest of the local disease and the beginning of convalescence. The appetite, which was before entirely dissipated, will return after the elapse of a few hours, in many cases; the writer can testify to periods as short as five to six hours after local arrest; and this forms a good index often to the arrest of the disease and the general condition of the patient. Isolated cases were noted, in which a patient having two wounds on different limbs, produced by the same missile, the one became gangrenous, while the other passed on to granulation and cicatrization. These cases were idiopathic in their origin.

Any one not familiar with the action of Bromine on a healing surface, would conclude that it was a highly corrosive and irritating agent, but a single practical illustration will convince the most skeptical to the contrary. Bromine coagulates the albumen of the sloughs, and thus it coats over or incrusts the surface of the wound; it cannot then penetrate any further or deeper. This incrustation can be readily removed with spatula or scissors; and thus living tissue may be reached, and the nearer the latter is approached the more effectual will the result be. In other words, the Bromine must be thoroughly mixed with the surface of living tissue. In some cases, where it was found impracticable to entirely remove the sloughs, the hypodermic syringe was brought into use with decided success.

METHOD FOR USING THE BROMINE.

IF the patient is nervous and intolerant of pain, and the gangrenous sloughs are very extensive, partial anesthesia had better be resorted to, unless contra indicated. The appliances necessary are as follows: a good stout one-ounce glass syringe, an ordinary glass or tumbler, an ounce of pure bromine, and an ordinary pocket case of surgical instruments, together with a horn spatula and two basins; the patient ætherized, or not, as the surgeon may desire; but if not, administer half an ounce of good whisky, in a half tumbler of water.

Fill the tumbler to contain the bromine three-fourths full of cold water; and then—introducing the neck of the stoppered bottle of bromine into the water, with one hand, remove the glass stopper with the other—the mouth and stopper immersed. Immediately the bromine settles to the bottom of the glass, its specific gravity being much heavier and denser than the water. Agitate the contents of the glass with the aid of the syringe, and thus the water becomes thoroughly impregnated with the bromine. Various strengths of the bromine may now be obtained, depending upon the point at which it is taken. A mild form may be had by drawing, with the syringe, from the surface; a medium, or stronger form, from the middle or centre of the column; while the pure bromine, if desired, may be drawn from the floor of the glass. For a gangrenous slough, the full strength should be applied—being careful to apply it at arm's-length, as the operator, if bending directly over it, will receive the fumes in his mouth and eyes, thus causing him to desist for awhile. The action of the bromine vapor on the nasal respiratory and conjunctival surfaces, will cause marked irritation. The latter may be almost immediately relieved by a free ablution of cold water to the eyes; snuffing cold water into the nostrils will relieve this organ, and that of the respiratory apparatus will subside by a visit to the open air, breathing it in freely. Time and much annoyance may, therefore, be obviated by a careful observance of this rule. The bromine then being in its full strength applied to the slough, the spatula may be used for its removal. If this implement fails to remove effectually, forceps and scissors must be brought into use, and the slough thus cut away until a quick or sensitive surface is reached. After this is accomplished, dash over the entire and denuded surface a syringe or two full of the medium strength—taken from the centre of the column in the glass. Trim away carefully the edges, and leave no fragment, or undershelving point, in which the gangrene may lodge. *Every particle* must needs be removed to insure a successful issue.

The water serves the double purpose of controlling the bromine, as well as to enable the operator to obtain the several strengths, as desired. The application is best made by quick,

short jerks with the piston-rod—driving it home gradually in this way. Should the first application of strong bromine fail to destroy the slough, another, of the same strength, should be repeated until it is accomplished. When the case to be treated is one of a penetrating gun-shot wound, a long-nozzled, glass (always) syringe should be inserted at one end, and then a second syringe, partly filled, at the other terminus of the wound, and the full strength used. This is forced thus into the wound, and again repeated until the entire slough can be effectually removed. A milder application is now used to the living surface, and thus continued daily—once, twice or thrice, as in the judgment of the operator the case may demand. A granulating surface should always be treated with the medium or weaker strengths of the bromine. Usually one part bromine to sixty or eighty of water suffices for this purpose. When bromine is applied too strong to a granulating surface, it here likewise coagulates the albumen, and thus kills the granulations. To the naked eye, there is very little difference, apparently, between such a surface and one affected by gangrene.

In some cases in which the bromine was not properly or thoroughly used, (either through fear or want of proper care,) the result was not so marked and rapid as in others properly and effectually treated. It will be known when the sound tissues are reached, by the patient evincing some sensitiveness; hence it is well that the patient should be allowed to recover from the effect of anesthesia before deciding that point. The immediate effect of bromine to a gangrenous surface is the hardening or coagulating effect; and the color imparted is of a yellowish white. The fœtid odor peculiar to gangrene is corrected at once, and effectually, by the bromine, when properly and thoroughly applied. As long as any fœtor remains, it is certain that the bromine needs re-applying. If these points are not rigidly observed, the gangrene will nestle in some nook or corner, and from a single point will speedily re-invade the neighboring parts.

The best means for dressing purposes, after the bromine has been effectually applied, is a stimulating poultice, composed of pulv. flexseed, 10 to 15 parts, with one part pulv. charcoal, to

which from 6 to 10 tablespoonfuls of yeast (or in the absence of this article use porter or ale, instead of water—which latter article would be needed in case yeast were used) to give proper consistency to the poultice. The poultice applied, over all a piece of oil silk, or gum cloth, will retain moisture for a period of 24 hours.

If necessary, a loose roller bandage may be placed on, to secure the dressings in position. The dressings must never be allowed to get dry, but prevented by the use of the outer covering of oil silk, or gum cloth, already mentioned. A portion of glycerine—say one part to 50 or 60 of the fluid—will materially assist in retaining moisture. A low trituration of bromine should be given internally at the same time.

The part affected should be kept in a recumbent, and not a dependent position. As soon as granulations have become firmly established, then dispense with the poulticing, and use instead a Carbolized Oil dressing, of five to ten grains to the ounce of oil, or, what is much more desirable dressing, in the writer's estimation, Carbolized cosmoline, or Petro cerate, of same strength.

Another important feature, observed in the use of bromine, in the treatment of gangrene, is its powerful properties in preventing the spread of gangrene in hospital wards. Instances were repeatedly observed in which gangrenous cases were admitted, unwittingly, into hospital wards, with numbers of other, wounded men; and, by a careful and thorough fumigation daily of the air of the wards, besides treating thoroughly the infected cases with the Bromine, no instance of its spread occurred.

After its certainty and success had become known (among those who were testing the Bromine treatment,) all the former dread and fears, that previously held sway throughout the hospitals, in which it had been tested, gave way to a sense of security and confidence, that was mutually participated in by surgeons and patients. None but those who were the happy instruments in this humane effort knew the great peace, of both mind and body, that followed. The feeling was one of deep thankfulness, for it seemed as though some hideous monster had been dethroned in our very midst; and it was regarded as a God-given boon.

The news of an approaching conflict was never received with anything like the terror that had been inspired, when the cry rang out (among our sick and wounded) that *gangrene*—that fell destroying monster!—had invaded our midst. There was no one disease that decimated our ranks, as did this terrible malady. But armed now with Bromine, the feeling of confidence that pervaded us was attended with a certainty of success, that knows no such word as *failure*. Many were the expressions of gratitude toward the late Prof. Brainard, of Chicago, for his timely and valuable suggestion, which the writer noticed in a brief article from his pen, in which he classified Bromine as one of the haloginous remedies; though Prof. B. had never tested its value in this class of diseases. From this suggestion alone, the writer was induced to institute the first series of experiments in the treatment of these various diseases; which were rewarded with success, and led the way to the marked results finally obtained.

Some there are who have undertaken, after a fashion, to test the Bromine remedy but have failed simply because they did not comply *strictly* with the rules necessary to ensure success. All these failures as far as known were attributable to inefficiency and the careless manner in which the Bromine was applied.

Those, on the other hand, who have regarded the rules laid down, have never failed to arrest these maladies short of a complete exhaustion of the vital forces. Time and space forbid the enumeration of cases here; but numbers could be adduced and authenticated in which the most marvellous results of success were obtained, and lives were snatched, as it were, from the very jaws of death.

A few remarks in regard to the character of the diet necessary in these cases, are appropriate here. A stimulating, nourishing diet, principally of a fluid nature, should be rigidly enforced in extreme cases for the first few days. Milk punch, prepared as follows: to one pint of sweet, unskimmed milk add a well-beaten fresh egg; sweeten moderately; and then add four to six tablespoonfuls of good whiskey or pure brandy. This should be given in moderate quantities, say an ounce or

two at a draught—thus taken *ad libitum* and according to the state of the stomach. Fresh milk in as liberal quantities as can be borne. Beef tea, made after the following formula: to one pound of fresh, lean beef—chopped fine as mince meat, placed and covered in a glazed earthen dish—add one pint cold water, allowing it to macerate for the period of two to three hours. Place now on a brisk fire, and allow it to cook for twenty minutes. Strain through a coarse sieve, salt moderately, and administer cold or hot, as the patient may elect, and in such quantities as can be borne, frequently repeated, night and day. As the patient improves, a glass or two of good porter may be added daily to this list. Finally, rare beef, mutton, chicken, potatoes, light pudding and the like, may be used. Cleanliness of person, and frequent, warm, sponge and spirit baths, will conduce much to the recovery and benefit of the patient.

The writer here takes occasion to add his experience in the use of that most valuable and efficient agent, the “Sulphite of Soda,” in the treatment of all forms of erysipelas—*except* in the gangrenous variety; averring, as he does, that he has never known a failure in any single case since adopting its use. The Sulphite, in the proportion of forty to eighty grains to the ounce, or stronger, if necessary, will abort the most severe attacks in twenty-four to thirty-six hours, if properly and freely used.

Bromine is also a valuable agent in the treatment of *uncomplicated* erysipelas; but the method of applying it is somewhat tedious and troublesome. The use of the Sulphite of Soda and the facility and great success with which it can be used, leaves nothing to desire; still, I will briefly give the “modus operandi” for Bromine.

Presuming the face to be the locality affected:—First carefully wash and rinse the part with moderately hot water, so as thoroughly to soften the epidermis. Pure, white, castile soap may be added and will facilitate this end. Then thoroughly rinse the suds from the parts with hot water. The tar soap, manufactured by Packard & Co., of New York, is a valuable preparation, likewise, for this purpose. Cut now a mask; from

patent lint, to fit the entire face—cutting suitable apertures for nose and mouth, and allowing the margins to overlap freely the diseased surface. A second piece cut in the same manner and then a third one of oiled silk or sheet rubber. Spread one of the lint masks, very lightly, with Petro cerate, cosmoline, or some other simple unguent, and lay it on the face. Saturate now the second lint mask, with a solution of Bromine, one part to forty or fifty of water, and quickly apply over the former; pressing out first the surplus of fluid, to prevent dripping. Over all this speedily place the oiled silk, or gum cloth, with apertures cut to accommodate the nose and mouth, and thus the dressing is completed. The outer mask of lint should be renewed, four to five times daily, or as often as the vapor of the Bromine subsides. Two patches of dry lint should be previously placed—one over each eye—for the purpose of protection from the action of the remedy; this precaution is necessary for the patient's comfort at least. In all cases in which Bromine is used locally it is advisable to use the same remedy internally. The 30th trituration is a potency which the writer has used with satisfaction.

Herewith will be found annexed two tabular statements, Nos. 1 and 2, of eight hundred and forty cases treated, personally, by the writer during the war of the Rebellion. There is also annexed a third, embracing a list of two hundred and forty-three cases of traumatic and hospital gangrene, and gangrenous erysipelas, treated in private and hospital practice; and this is designated as No. 3.

By a reference to Table No. 1, it will be observed that Series A consists of a total of seventy-five cases, treated with other remedies than bromine; with thirty-five recoveries and forty deaths; the percentage of loss being $53\frac{33}{100}$. Series B embraces two hundred cases, treated with bromine, in all kinds of ways—*i. e.*, strong, weak and medium. Out of this number, there were one hundred and eighty recoveries and twenty deaths, the percentage of loss being 10. Here we have a gain of $43\frac{33}{100}$ per cent. over all other known remedies. Not content with this result, the bromine was still further pushed in the treatment of gangrenous erysipelas; and the remedy was applied in its

strongest solution, topically, and given likewise internally of the first decimal dilution, four times daily; in addition to which the hospital wards were fumigated with bromine vapor; and here—as it will be perceived by a reference to the table of Series C—one hundred and eighty-five were thus treated; and the result obtained was one hundred and eighty recoveries, with but five deaths: percentage of loss, $2\frac{71}{100}$ —a gain of 41 per cent. over the first series treated with other remedies; and of $7\frac{29}{100}$ per cent. over the second series (B), or those treated with bromine of varied strengths.

The tabular statement of hospital gangrene will show up quite as brilliant results. This is designated as No. 2.

Table No. 3 embraces (as will be noted by reference thereto) two hundred and forty-three cases, treated during the period of eleven years by the writer, in private and hospital practice. Here, too, the bromine and sulphite of soda treatment shows up very handsome results—the loss being less than three per cent.

In conclusion, we challenge a finer exhibit for the same class of diseases.

I. Tabular Statement of Cases of Erysipelas treated at Saterlee General Hospital, West Philada., at Fredericksburg and City Point, Va., Summer and Fall of 1863 and 1864.

GANGRENE.																																							
	Total Number of Cases.			Recoveries.		Died.		RECOVERIES COMPLICATED WITH										DEATHS COMPLICATED WITH						Average Duration of Treatment and Arrest of Disease.			Average Time of Disappearance.		Average Time of Convalescence.		Mortality.								
								Wounded.	Diphtheria.	Sup Cellulitis.	Pneumonia.	Secondary Syphilis.	Gangraenopsis.	Colligative Diarrhea.	Secondary Hemorrhage.	Typhoid Fever.	Phtisis Pulmonalis.	Uncomplicated.	Tetanus.	Phtisis Pulmonalis.	Typhoid Pneumonia.	Edema Glottidis.	Secondary Hemorrhage.	Typhoid Fever.	Uncomplicated.	Days.	Hours	Days.	Hours	Days.	Hours	Deaths 35.	Percentage of Loss 53 ³³ / ₁₀₀ .	Deaths 20.	Percentage of Loss 10.	Deaths 5.	Percentage of Loss 7 ¹ / ₁₀₀ .		
SERIES A.																																							
Treatment with other remedies (Bromine excluded)	75	35	40															35		3	2	3	5	1	2	24	9	18	28										
SERIES B.																																							
Treated with Bromine in all sorts of ways; strong, weak, medium.	200	180	20	5	2	4	10	4	6	2	5							142		2	3				2	12	9	6											
SERIES C.																																							
Treated with full strength of Bromine, topically and in addition thereto purifying the Hospital Wards with Bromine vapor.	185	180	5	5	8	5	8		15	2	13	4						112		1	1	2			1														
	460	395	65	10	10	9	18	4	21	4	18	4						289		6	3	8	6	1	5	36													

GANGRENE.

II. Tabular Statement of Hospital Gangrene treated in Post Hospital and Field Service during the Summer and Fall of 1863 and 1864, Army of the Potomac.

	Number of Cases Treated.	Recoveries.	Deaths.	Amputations.	Average Period of Treatment.		Percentage of Loss.
					Days.	Hours.	
Treated with Bromine in all kinds of ways, from weak to strong	130	127	3	0	5	16½	2½ ⁶¹ / ₁₀₀ Percentage of Loss or 97 ³⁹ / ₁₀₀ Recoveries out of 100 Cases.
Treated with Bromine in solution, <i>exclusively</i>	84	82	2	0	9	6	
Treated with pure Bromine after the solution had failed . .	10	10	0	0	12	20	
Treated <i>exclusively</i> with strongest Bromine solution	49	46	3	0	2	21	
Treated with strongest Bromine solution after Nitric Acid had failed	23	22	0	1	3	17½	
Treated with strongest Bromine solution after all other remedies had failed	10	10	0	0	5	8	58 ⁵⁴ / ₁₀₀ Percentage of Loss.
Treated with Nitric Acid, <i>exclusively</i>	41	17	24		8	20	
Treated with other remedies, <i>exclusively</i>	33	19	14		9	16	
Total . . .	380	333	46	1			42 ⁴² / ₁₀₀ Percentage of Loss.

III. Tabular Statement of Hospital Gangrene and Gangrenous Erysipelas in Hospital and Private Practice, embraced within a period of eleven years, from 1865 to 1876.

	<i>Number of Cases Treated.</i>	<i>Recoveries.</i>	<i>Complicated with Pyæmia.</i>	<i>Complicated with Tetanus.</i>	<i>Deaths from Shock.</i>	<i>Deaths from Exhaustion.</i>	<i>Deaths from Pyæmia</i>	<i>Averaged duration of Treatment.</i>	<i>Percentage of Loss.</i>
								<i>Days.</i> <i>Hours.</i>	
Hospital Gangrene treated with strongest Bromine solution and fumigating the wards with Bromine vapor	27	26	5	2	2			7 20	
Gangrenous Erysipelas treated with strongest Bromine solution and fumigations	13	13	5					9 17	
Idiopathic Erysipelas treated with Sulphite of Soda.	113	112	9				3	6 4	
Traumatic Erysipelas treated with Sulphite of Soda.	90	89	5	1		2		5 7	$2\frac{88}{100}$ Percentage of Loss.
Total . .	243	240	24	3	2	2	3		

	<i>Cases. .</i>	<i>Recoveries.</i>	<i>Deaths.</i>					$10\frac{53}{100}$ Percentage of Loss.
Grand Total . .	1083	969	114					

BOERICKE & TAFEL'S HOMŒOPATHIC PUBLICATIONS.

ALLEN, DR. T. F. The Encyclopedia of Pure Materia Medica; a Record of the Positive Effects of Drugs upon the Healthy Human Organism. With contributions from Dr. Richard Hughes, of England; Dr. C. Hering, of Philadelphia; Dr. Carroll Dunham, of New York; Dr. Adolph Lippe, of Philadelphia, and others. X volumes. Price bound in cloth, \$60.00; in half morocco or sheep, . . . \$70 00

This is the most complete and extensive work on Materia Medica ever attempted in the history of medicine—a work to which the homœopathic practitioner may turn with the certainty of finding the whole pathogenetic record of any remedy ever used in homœopathy, the record of which being published either in bookform or in journals. The volumes average about 640 pages each.

ALLEN, DR. T. F. A General Symptom Register of the Homœopathic Materia Medica. By TIMOTHY F. ALLEN, M.D., Author of the Encyclopædia of Pure Materia Medica. 1340 pages in one large volume. Price in cloth, \$12.00; in sheep or half morocco, . \$14 00

This Index to the Encyclopædia of Materia Medica is at the same time the best arranged and most complete Repertory ever attempted. Its ingenious selection and arrangement of different kinds of type greatly facilitate its use.

ANGELL, DR. H. C. A Treatise on Diseases of the Eye; for the Use of Students and Practitioners. By Henry C. Angell, M.D., Professor of Ophthalmology in the Boston University School of Medicine, etc., etc. Fifth edition, enlarged and illustrated. 343 pages. 12mo. Cloth, \$3 00

The fifth edition of this standard work has just been issued from the press, and shows that the whole work has been thoroughly revised and brought up to the latest dates in ophthalmology. Exquisite clear *photographic* illustrations have been added, and an exposition given of the dioptric or metric system, as applied to lenses for spectacles.

BAEHR, DR. B. The Science of Therapeutics according to the Principles of Homœopathy. Translated and enriched with numerous additions from Kafka and other sources, by C. J. HEMPEL, M.D. Two volumes. 1387 pages, \$9 00

. "In short Dr. Baehr has presented us with the results of his observations at the bedside rather than of his researches in the study. It is this which renders his work valuable, and which at the same time accounts for his occasional imperfections. We know:

of no work of the kind in homœopathic literature where the suggestions for the choice of medicines are given in a fresher or clearer manner, or in one better calculated to interest and inform the practitioner. We have only to add that the two volumes are highly creditable to the publishers. The type is good, the paper good, and the binding excellent."—*Monthly Homœopathic Review*.

BECKER, DR. A. C. Dentition, according to some of the best and latest German authorities. 82 pages. 12mo. Cloth, . 50 cts.

BECKER, DR. A. C. Diseases of the Eye, treated homœopathically. From the German. 77 pages. 12mo. Cloth, . 50 cts.

BELL, DR. JAMES B. The Homœopathic Therapeutics of Diarrhœa, Dysentery, Cholera, Cholera Morbus, Cholera Infantum, and all other loose evacuations of the bowels. 168 pages. Bound in Muslin. 12mo. Cloth, . \$1 00

This little book had a very large sale, and but few physicians' offices will be found without it. The work was, without exception, very highly commended by the homœopathic press.

BERJEAU, J. PH. The Homœopathic Treatment of Syphilis, Gonorrhœa, Spermatorrhœa, and Urinary Diseases. Revised, with numerous additions, by J. H. P. Frost, M.D. 256 pages. 12mo. Cloth, . \$1 50

"This work is unmistakably the production of a practical man. It is short, pithy, and contains a vast deal of sound practical instruction. The diseases are briefly described; the directions for treatment are succinct and summary. It is a book which might with profit be consulted by all practitioners of homœopathy."—*North American Journal*.

BREYFOGLE, DR. W. L. Epitome of Homœopathic Medicines. 383 pages, . \$1 25
Interleaved with writing paper. Half morocco, . \$2 25

We quote from the author's preface:

"It has been my aim, throughout, to arrange in as concise form as possible, the leading symptoms of all well-established provings. To accomplish this, I have compared Lippe's Mat. Med.; the Symptomen-Codex; Jahr's Epitome; Bœnninghausen's Therapeutic Pocket-Book, and Hale's New Remedies."

BRYANT, DR. J. A Pocket Manual, or Repertory of Homœopathic Medicine, Alphabetically and Nosologically arranged, which may be used as the Physicians' *Vade-mecum*, the Travellers' Medical Companion, or the Family Physician. Containing the Principal Remedies for the most important Diseases; Symptoms, Sensations, Characteristics of Diseases, etc.; with the Principal Pathogenetic Effects of the Medicines on the most important Organs and Functions of the Body, together with Diagnosis, Explanation of Technical Terms, Directions for the selection and Exhibition of Remedies, Rules of Diet, etc. Compiled from the best Homœopathic authorities. Third edition. 352 pages. 18mo. Cloth, . \$1 50

BUTLER, JOHN. A Text-Book of Electro-Therapeutics and Electro-Surgery, for the Use of Students and General Practitioners. By John Butler, M.D., L.R.C.P.E., L.R.C.S.I., etc., etc. Second edition, revised and enlarged. 350 pages. 8vo. Cloth, \$3 00

"Butler's work gives with exceptional thoroughness all details of the latest researches on

Electricity, which powerful agent has a great future, and rightly demands our most earnest consideration. But Homœopathia especially must hail with delight the advent from out the ranks of her apostles of a writer of John Butler's ability. His book will also find a large circle of non-homœopathic readers, since it does not conflict with the tenets of any therapeutic sect, and particular care has been bestowed on the technical part of electro-therapeia."—*Homœopathische Rundschau*.

DAKE, DR. WM. C. Pathology and Treatment of Diphtheria.

By Wm. C. Dake, M.D., of Nashville, Tenn. 55 pages. 8vo. Paper, 50 cts.

This interesting monograph was enlarged from a paper read at the Third Annual Meeting of the Homœopathic Society of Tennessee, held at Memphis, September 19, 1877.

It gives a report of one hundred and seventy-six cases treated during a period of eleven months. It well repays a careful perusal.

DUNHAM, CARROLL, A.M., M.D. Homœopathy the Science of Therapeutics. A collection of papers elucidating and illustrating the principles of homœopathy. 529 pages. 8vo. Cloth, . . . \$3 00

Half morocco, \$4 00

"After reading this work no one will attempt to justify the practice of alternation of remedies. It is simply the lazy man's expedient to escape close thinking or to cover his ignorance. The one remedy alone can be accurate and scientific; a second or third only complicates and spoils the case, and will inevitably ruin a good reputation. But to come to more practical matters, more than one-half of this volume is devoted to a careful analysis of various drug-provings. It teaches us Materia Medica after a new fashion, so that a fool can understand, not only the full measure of usefulness, but also the limitations which surround the drug. . . . We ought to give an illustration of his method of analysis, but space forbids. We can only urge the thoughtful and studious to obtain the book, which they will esteem as second only to the *Organon* in its philosophy and learning."—*The American Homœopathist*.

DUNHAM, CARROLL, A.M., M.D. Lectures on Materia Medica.

858 pages. 8vo. Cloth, \$5 00

Half morocco, \$6 00

. . . "Vol. I is adorned with a most perfect likeness of Dr. Dunham, upon which stranger and friend will gaze with pleasure. To one skilled in the science of physiognomy there will be seen the unmistakable impress of the great soul that looked so long and steadfastly out of its fair windows. But our readers will be chiefly concerned with the contents of these two books. They are even better than their embellishments. They are chiefly such lectures on Materia Medica as Dr. Dunham alone knew how to write. They are preceded quite naturally by introductory lectures, which he was accustomed to deliver to his classes on general therapeutics, on rules which should guide us in studying drugs, and on the therapeutic law. At the close of Vol. II we have several papers of great interest, but the most important fact of all is that we have here over fifty of our leading remedies presented in a method which belonged peculiarly to the author, as one of the most successful teachers our school has yet produced. . . . Blessed will be the library they adorn, and wise the man or woman into whose mind their light shall shine."—*Cincinnati Medical Advance*.

EGGERT, DR. W. The Homœopathic Therapeutics of Uterine and Vaginal Discharges. 543 pages. 8vo. Half morocco, \$3 50

The author brought here together in an admirable and comprehensive arrangement everything published to date on the subject in the whole homœopathic literature, besides embodying his own abundant personal experience. The contents, divided into eight parts, are arranged as follows:

PART I. Treats on *Menstruation and Dysmenorrhœa*; PART II. *Menorrhagia*; PART III. *Amenorrhœa*; PART IV. *Abortion and Miscarriage*; PART V.

Metrorrhagia; PART VI. *Fluor albus*; PART VII. *Lochia*; and PART VIII. *General Concomitants*. No work as complete as this, on the subject, was ever before attempted, and we feel assured that it will meet with great favor by the profession.

"The book is a counterpart of Bell on Diarrhœa, and Dunham on Whooping-cough. Synthetics, Diagnosis and Pathology are left out as not coming within the scope of the work. The author in his preface says: Remedies and their symptoms are left out, and the symptoms and their remedies have received sole attention—that is what the busy practitioner wants. The work is one of the essentials in a library."—*American Observer*.

"A most exhaustive treatise, admirably arranged, covering all that is known of therapeutics in this important department."—*Homœopathic Times*.

GUERNSEY, DR. H. N. The Application of the Principles and Practice of Homœopathy to Obstetrics and the Disorders Peculiar to Women and Young Children. By HENRY N. GUERNSEY, M.D., Professor of Obstetrics and Diseases of Women and Children in the Homœopathic Medical College of Pennsylvania, etc., etc. With numerous Illustrations. Third edition, revised, enlarged, and greatly improved. 1004 pages. 8vo. Half morocco, \$8 00

This standard work, with the numerous improvements and additions, is the most complete and comprehensible work on the subject in the English language. Of the previous editions, almost four thousand copies are in the hands of the profession, and of this third edition a goodly number have already been taken up. There are few other professional works that can boast of a like popularity, and with all new improvements and experiences diligently collected and faithfully incorporated into each successive edition, this favorite work will retain its hold on the high esteem it is held in by the profession, for years to come. It is superfluous to add that it was and is used from its first appearance as a text-book at the homœopathic colleges.

GUERNSEY, DR. E. Homœopathic Domestic Practice. With Full Descriptions to the Dose to each single Case. Containing also Chapters on Anatomy, Physiology, Hygiene, and an abridged Materia Medica. Tenth enlarged, revised, and improved edition. 653 pages. Half leather, \$2 50

GUERNSEY, DR. W. E. The Traveller's Medical Repertory and Family Adviser for the Homœopathic Treatment of Acute Diseases. 36 pages. Cloth, 30 cts.

This little work has been arranged with a view to represent in as compact a manner as possible all the diseases—or rather disorders—which the non-professional would attempt to prescribe for, it being intended only for the treatment of simple or acute diseases, or to allay the suffering in maladies of a more serious nature until a homœopathic practitioner can be summoned.

HAHNEMANN, DR. S. The Lesser Writings of. Collected and Translated by R. E. DUDGEON, M.D. With a Preface and Notes by E. MARCY, M.D. With a Steel Engraving of Hahnemann from the statue of Steinhauser. 784 pages. Half bound, \$3 00

This valuable work contains a large number of Essays, of great interest to laymen as well as medical men, upon Diet, the Prevention of Diseases, Ventilation of Dwellings, etc. As many of these papers were written before the discovery of the homœopathic theory of cure, the reader will be enabled to peruse in this volume the ideas of a gigantic intellect when directed to subjects of general and practical interest.

HAHNEMANN, DR. S. Organon of the Art of Healing. By SAMUEL HAHNEMANN. Aude Sapere. Fifth American edition, translated from the Fifth German edition, by C. WESSELHÆFT, M.D. 244 pages. 8vo. Cloth, \$1 75

This fifth edition of "Hahnemann Organon" has a history. So many complaints were made again and again of the incorrectness and cumbersome style of former and existing editions to the publishers, that, yielding to the pressure, they promised to destroy the plates of the fourth edition, and to bring out an entire re-translation in 1876, the Centennial year. After due consideration, and on the warm recommendation of Dr. Constantine Hering and others, the task of making this re-translation was confided to Dr. C. Wesselhæft, and the result of years of labor is now before the profession, who will be best able themselves to judge how well he succeeded in acquitting himself of the difficult task.

"To insure a correct rendition of the text of the author, they (the publishers) selected as his translator Dr. Conrad Wesselhæft, of Boston, an educated physician in every respect, and from his youth up perfectly familiar with the English and German languages, than whom no better selection could have been made." "That he has made, as he himself declares, 'an entirely new and independent translation of the whole work,' a careful comparison of the various paragraphs, notes, etc., with those contained in previous editions, gives abundant evidence; and while he has, so far as was possible, adhered strictly to the letter of Hahnemann's text, he has at the same time given a pleasantly flowing rendition that avoids the harshness of a strictly literal translation."—*Hahnemannian Monthly*.

HALE, DR. E. M. Lectures on Diseases of the Heart. In Three Parts. Part I. Functional Disorders of the Heart. Part II. Inflammatory Affections of the Heart. Part III. Organic Diseases of the Heart. Second enlarged edition printing.

HALE, DR. E. M. Materia Medica and Special Therapeutics of the New Remedies. Fourth edition, revised and enlarged. In two Volumes.

Vol. I. Special Symptomatology. With new Botanical and Pharmacological Notes. 672 pages. Cloth, \$5 00

Vol. II. Special Therapeutics. With Illustrative Clinical Cases. 900 pages. Second enlarged edition. Cloth, \$5 00

N. B.—Same in half morocco, per Volume, \$6 00

"Dr. Hale's work on *New Remedies* is one both well known and much appreciated on this side of the Atlantic. For many medicines of considerable value we are indebted to his researches. In the present edition, the symptoms produced by the drug investigated, and those which they have been observed to cure, are separated from the clinical observations, by which the former have been confirmed. That this volume contains a very large amount of invaluable information is incontestable, and that every effort has been made to secure both fulness of detail and accuracy of statement, is apparent throughout. For these reasons we can confidently commend Dr. Hale's fourth edition of his well-known work on the *New Remedies* to our homœopathic colleagues."—*Monthly Homœopathic Review*.

"We do not hesitate to say that by these publications Dr. Hale rendered an inestimable service to homœopathy, and thereby to the art of medicine. 'The school of Hahnemann in every country owes him hearty thanks for all this; and allopathy is beginning to share our gain.' The author is given credit for having in this fourth edition corrected the mistake for which the third one had been taxed rather severely, by restoring in Vol. II the 'special therapeutics,' instead of the 'characteristics' of the third edition."—*British Journal of Homœopathy*.

HALE, DR. E. M. The Medical, Surgical, and Hygienic Treatment of Diseases of Women, especially those causing Sterility, the Disorders and Accidents of Pregnancy, and Painful and Difficult Labor. By EDWIN M. HALE, M.D., Professor of Materia Medica and Therapeutics in the Chicago Homœopathic College, etc., etc. Second enlarged edition. 378 pages. 8vo. Cloth, . . . \$2 50

"This new work embodies the observations and experience of the author during twenty-five years of active and extensive practice, and is designed to supplement rather than supersede kindred works. The arrangement of the subjects treated is methodical and convenient; the introduction containing an article inserted by permission of Dr. Jackson, of Chicago, the author upon the ovular and ovulation theory of menstruation, which contains all the observations of practical importance known on this subject to date. The diseases causing sterility are fully described, and the medical, surgical, and hygienic treatment pointed out. The more generally employed medicines are enumerated, but their special or specific indications are unfortunately omitted. The general practitioner will find a great many valuable things for his daily rounds, and cannot afford to do without the book. The great reputation and ability of the author are sufficient to recommend the work, and to guarantee an appreciative reception and large sale."—*Hahnemannian Monthly*.

HAYWARD, DR. JOHN W. Taking Cold (the Cause of half our Diseases): Its Nature, Causes, Prevention and Cure; its frequency as a Cause of other Disease, and the Diseases of which it is the Cause, with their Diagnosis and Treatment. Fifth edition, enlarged and improved. London, 1875. 188 pages. 18mo. Cloth, 50 cts.

We quote from the author's preface:

"This Essay was originally published under the conviction that, by attention to the directions it contains, persons may not only very frequently avoid taking cold, but may themselves frequently cure a cold at the onset, and thereby prevent the development of many of those serious diseases that would otherwise follow. The favorable reception it has met with is a sufficient testimony that it has been found useful."

HELMUTH, DR. W. T. A System of Surgery. Illustrated with 568 Engravings on Wood. By WM. TOD HELMUTH, M.D. Third edition. 1000 pages. Sheep, \$8 50

This third edition of Dr. Helmuth's great work is already in appearance a great improvement over the old edition, it being well printed on fine paper, and well bound. By increasing the size of the page, decreasing the size of type, and setting up *solid*, fully one-half more printed matter is given than in the previous edition, albeit there are over 200 pages less. And while the old edition, bound in sheep, was sold at \$11.50 by its publishers, this improved third edition is now furnished at \$3 less, or for \$8.50. The author brought the work fully up to date, and for an enumeration of some of the more important improvements, we cannot do better than to refer to Dr. Helmuth's own Preface.

HEMPEL, DR. C. J. The Science of Homœopathy; or, A Critical and Synthetical Index of the Doctrines of the Homœopathic School. Second edition. 180 pages. Large 8vo. Cloth, \$1 75

HEMPEL, DR. C. J., and DR. J. BEAKLEY. Homœopathic Theory and Practice. With the Homœopathic Treatment of Surgical Diseases, designed for Students and Practitioners of Medicine, and as a Guide for an intelligent public generally. Fourth edition. 1100 pages, \$3 00

HERING, DR. C. Condensed Materia Medica. Second edition.
More condensed, revised, enlarged, and improved, . . . \$7 00

In February, 1877, we were able to announce the completion of Hering's *Condensed Materia Medica*. The work, as was to be expected, was bought up with avidity by the profession, and already in the Fall of 1878 the author set to work perfecting a second and improved edition. By still more condensing many of the remedies, a number of new ones could be added without much increasing the size and the price of the work. This new edition is now ready for the profession, and will be the standard work par excellence for the practitioner's daily reference.

HEINIGKE, DR. CARL. Pathogenetic Outlines of Homœopathic Drugs. Translated from the German by EMIL TIETZE, M.D., of Philadelphia. 576 pages. 8vo. Cloth, . . . \$3 50

This work, but shortly issued, is already meeting with a large sale and an appreciative reception. It differs from most works of its class in these respects:

1. That the symptomatic outlines of the various drugs are based exclusively upon the "pathogenetic" results of provings.

2. That the anatomico-physiological arrangement of the symptoms renders easier the understanding and survey of the provings.

3. That the pathogenetic pictures drawn of most of the drugs, gives the reader a clearer idea, and a more exact impression of the action of the various remedies.

Each remedy is introduced with a brief account of its preparation, duration of action, and antidotes.

HILDEBRANDT, PROF. H. Catarrh of the Female Sexual Organs. Translated with the addition of the Homœopathic Treatment, by S. LILIENTHAL, M.D., . . . 30 cts.

HOLCOMBE, DR. W. H. Yellow Fever and its Homœopathic Treatment, . . . 10 cts.

HOLCOMBE, DR. W. H. What is Homœopathy? A new exposition of great truth. 28 pages. 8vo. Paper cover, per doz., \$1.25, 15 cts.

"Prove all things, hold fast that which is good."—*St. Paul*.

HOLCOMBE, DR. W. H. How I became a Homœopath. 28 pages. 8vo. Paper cover, per dozen, \$1.25, . . . 15 cts.

HOLCOMBE, DR. W. H. Special Report of the Homœopathic Yellow Fever Commission, ordered by the American Institute of Homœopathy for presentation to Congress. 32 pages. 8vo. Paper, per 100, \$4.00, . . . 5 cts.

This Report, written in Dr. Holcombe's masterly manner, is one of the best campaign documents for homœopathy. The statistics must convince the most skeptical, and every homœopathic practitioner should feel in duty bound to aid in securing its widest possible circulation.

HOMŒOPATHIC POULTRY PHYSICIAN (Poultry Veterinarian); or, Plain Directions for the Homœopathic Treatment of the most Common Ailments of Fowls, Ducks, Geese, Turkeys, and Pigeons, based on the author's large experience, and compiled from the most reliable sources, by Dr. Fr. Schröter. Translated from the German. 84 pages. 12mo. Cloth, . . . 50 cts.

We imported hundreds of copies of this work in the original German for our customers, and as it gave good satisfaction, we thought it advisable to give it an English dress, so as to make it available to the public generally. The little work sells very fast, and our readers will doubtless often have an opportunity to draw the attention of their patrons to it.

HOMŒOPATHIC COOKERY. Second edition. With additions by a Lady of an American Homœopathic Physician. Designed chiefly for the Use of such Persons as are under Homœopathic Treatment. 176 pages, 50 cts.

HUGHES, DR. R. Manual of Pharmacodynamics. 500 pages. American reprint out of print. See list of British books.

HUGHES, DR. R. Manual of Therapeutics. 540 pages. American reprint out of print. See list of British books.

HULL'S JAHR. A New Manual of Homœopathic Practice, Edited, with Annotations and Additions, by F. G. SNELLING, M.D. Sixth American edition. With an Appendix of the New Remedies, by C. J. HEMPEL, M.D. 2 vols. 2076 pages, \$9 00

The *first volume*, containing the symptomatology, gives the complete pathogenesis of two hundred and eighty-seven remedies, besides a large number of new remedies are added by Dr. Hempel, in the appendix. The second volume contains an admirably arranged Repertory. Each chapter is accompanied by copious clinical remarks and the concomitant symptoms of the chief remedies for the malady treated of, thus imparting a mass of information, rendering the work indispensable to every student and practitioner of medicine.

JAHR, DR. G. H. G. Therapeutic Guide; the most Important Results of more than Forty Years' Practice. With Personal Observations regarding the truly reliable and practically verified Curative Indications in actual cases of disease. Translated, with Notes and New Remedies, by C. J. HEMPEL, M.D. 546 pages, \$3 00

"With this characteristically long title, the veteran and indefatigable Jahr gives us another volume of homœopathics. Besides the explanation of its purport contained in the title itself, the author's preface still further sets forth its distinctive aim. It is intended, he says, as a 'guide to beginners, where I only indicate the most important and decisive points for the selection of a remedy, and where I do not offer anything but what my own individual experience, during a practice of forty years, has enabled me to verify as *absolutely decisive* in choosing the proper remedy.' The reader will easily comprehend that, in carrying out this plan, I had rigidly to exclude all cases concerning which I had no experience of *my own* to offer. . . . We are bound to say that the book itself is agreeable, chatty, and full of practical observation. It may be read straight through with interest, and referred to in the treatment of particular cases with advantage."—*British Journal of Homœopathy*.

JAHR, DR. G. H. G. Clinical Guide, or Pocket Repertory for the Treatment of Acute and Chronic Diseases.. Translated by C. J. HEMPEL, M.D. Second American revised and enlarged edition. From the third German edition, enriched by the addition of the New Remedies. By S. LILIENTHAL, M.D. 624 pages. 12mo. Half morocco, \$2 50

"To those of our readers who have used the old edition, nothing need be said to induce them to procure a copy of the new. To others, however, we feel free to state that as a volume of ready reference to lie on the office desk, or be used at the bedside, it is very valuable, and will save many tedious and distracting hunts through the *symptomen codex*. The typographical execution of the book is excellent."—*Hahnemannian Monthly*.

JAHR, DR. G. H. G. The Homœopathic Treatment of Diseases of Females and Infants at the Breast. Translated from the French by C. J. HEMPEL, M.D. 422 pages. Half leather, \$2 00

This work deserves the most careful attention on the part of homœopathic practitioners. The diseases to which the female organism is subject are described with the most minute correctness, and the treatment is likewise indicated with a care that would seem to defy criticism. No one can fail to study this work but with profit and pleasure.

JAHR, DR. G. H. G. Diseases of the Skin; or, Alphabetical Repertory of the Skin Symptoms, and External Alterations of Substance, together with the Morbid Phenomena observed in the Glandular, Osseous, Mucous, and Circulatory Symptoms. Arranged with Pathological Remarks on Diseases of the Skin. Edited by C. J. HEMPEL, M.D. 515 pages. 12mo. Cloth, \$1 50

JAHR, DR. G. H. G. The Venereal Diseases, their Pathological Nature, Correct Diagnosis, and Homœopathic Treatment. Prepared in accordance with the author's own, as well as with the experience of other physicians, and accompanied with critical discussions. Translated, with numerous and important additions, from the works of other authors, and from his own experience. By C. J. HEMPEL, M.D. 428 pages. 8vo. Cloth, \$3 00

This is the most elaborate treatise on the subject in print. The work is divided into four divisions, of which the first treats on Primary Forms of Venereal Diseases, in four chapters: On the Venereal Phenomena in general; the Different Forms of Gonorrhœa; the Various Forms of Chancre; and other Primary Forms of Syphilis. The second division, on Secondary Forms of Syphilis, treats in three chapters, of Secondary Syphilis generally; Syphilitic Cutaneous Affections, and Intermediate Forms of Syphilis. The third division: General Pathological Observations on Syphilis and its course generally, in three chapters; Pathological Nature and Origin of Syphilis; on Venereal Contagia; General Development, Course, and Termination of Syphilis. The fourth division: General Therapeutic Observations on the Treatment of Syphilis; General Diagnostic Remarks; General Therapeutic Observations; Pharmacodynamic Observations, and Addenda.

INDEX to the first eighteen volumes of the North American Journal of Homœopathy. Paper, \$2 00

JONES, DR. SAMUEL A. The Grounds of Homœopathic Faith. Three Lectures, delivered at the request of Matriculates of the Department of Medicine and Surgery (Old School) of the University of Michigan. By SAMUEL A. JONES, M.D., Professor of Materia Medica, Therapeutics, and Experimental Pathogenesis in the Homœopathic Medical College of the University of Michigan, etc., etc. 92 pages. 12mo. Cloth, per dozen, \$3; per hundred, \$20, 30 cts.

Lecture first is on *The Law of Similars; its Claim to be a Science in that it Enables Perversion*. Lecture second, *The Single Remedy a Necessity of Science*. Lecture third, *The Minimum Dose an Inevitable Sequence*. A fourth Lecture, on *The Dynamization Theory*, was to have finished the course, but was prevented by the approach of final examinations, the preparation for which left no time for hearing evening lectures. The *Lectures* are issued in a convenient size for the coat-pocket; and as an earnest testimony to the truth, we believe they will find their way into many a homœopathic household.

JOHNSON, DR. I. D. Therapeutic Key; or Practical Guide for the Homœopathic Treatment of Acute Diseases. Third edition. 312 pages. Bound in linen, \$1 50
Bound in flexible cover, \$2 00

This has been one of the best selling works on our shelves; more copies being in circulation of this than of any two other professional works put together. It is safe to say that there are but few homœopathic practitioners in this country but have one or more copies of this little remembrancer in their possession.

JOHNSON, DR. I. D. A Guide to Homœopathic Practice. Designed for the use of Families and Private Individuals. 494 pages. Cloth, \$2 00

This is the latest work on Domestic Practice issued, and the well and favorably known author has surpassed himself. In his book fifty-six remedies are introduced for internal application, and four for external use. The work consists of two parts. Part I is subdivided into seventeen chapters, each being devoted to a special part of the body, or to a peculiar class of disease. Part II contains a short and concise *Materia Medica*, *i. e.*, gives the symptoms peculiar to each remedy. The whole is carefully written with a view of avoiding technical terms as much as possible, thus insuring its comprehension by any person of ordinary intelligence. A complete set of remedies in vials holding over fifty doses each, is furnished for \$7, or in vials holding over one hundred doses each for \$10, or book and case complete for \$9 or \$12 respectively. Address orders to Boericke & Tafel's Pharmacies at New York, Philadelphia, Baltimore, Chicago, New Orleans, or San Francisco.

JOSLIN, DR. B. F. Principles of Homœopathy. In a Series of Lectures. 185 pages. 12mo. Cloth, 60 cts.

JOSLIN, DR. B. F. Homœopathic Treatment of Epidemic Cholera. Third edition, with additions. 252 pages. 12mo. Cloth, 75 cts.

This work offers the advantage of a threefold arrangement of the principal medicines, *viz.*, with reference, I—to the varieties of cholera; II—to its stages; and III—to its symptoms as arranged in repertories. These last will give the work a permanent value in treating the more frequent complaints of summer.

LAURIE AND McCLATCHEY. The Homœopathic Domestic Medicine. By JOSEPH LAURIE, M.D. *Ninth American*, from the Twenty-first English edition. Edited and revised, with numerous and important additions, and the introduction of the new remedies. By R. J. McCLATCHEY, M.D. 1044 pages. 8vo. Half morocco, \$5 00

"We do not hesitate to indorse the claims made by the publishers, that this is the most complete, clear, and comprehensive treatise on the domestic homœopathic treatment of diseases extant. This handsome volume of nearly eleven hundred pages is divided into six parts. *Part one* is introductory, and is almost faultless. It gives the most complete and exact directions for the maintenance of health, and of the method of investigating the condition of the sick, and of discriminating between different diseases. It is written in the most lucid style, and is above all things wonderfully free from technicalities. *Part two* treats of symptoms, character, distinctions, and treatment of general diseases, together with a chapter on casualties. *Part three* takes up diseases peculiar to women. *Part four* is devoted to the disorders of infancy and childhood. *Part five* gives the characteristic symptoms of the medicines referred to in the body of the work, while *Part six* introduces the repertory."—*Hahnemannian Monthly*.

"Of the usefulness of this work in cases where no educated homœopathic physician is within reach, there can be no question. There is no doubt that domestic homœopathy has done much to make the science known; it has also saved lives in emergencies. The practice has never been so well presented to the public as in this excellent volume."—*New Eng. Med. Gazette*.

A complete set of remedies of one hundred and four vials, containing over fifty doses each, is furnished for \$12, put up in an elegant mahogany case. A similar set in vials containing over one hundred doses each, is furnished for \$18, or book and case complete for \$17 or \$23 respectively. Address orders to Boericke & Tafel's Pharmacies at New York, Philadelphia, Baltimore, Chicago, New Orleans, or San Francisco.

LILIENTHAL, DR. S. Homœopathic Therapeutics. By S. LILIENTHAL, M.D., Editor of North American Journal of Homœopathy, Professor of Clinical Medicine and Psychology in the New York Homœopathic Medical College, and Professor of Theory and Practice in the New York College Hospital for Women, etc. Second edition. 8vo, \$5 00
Half morocco, : \$6 00

"Certainly no one in our ranks is so well qualified for this work as he who has done it, and in considering the work done, we must have a true conception of the proper sphere of

such a work. For the fresh graduate, this book will be invaluable, and to all such we unhesitatingly and very earnestly commend it. To the older one, who says he has no use for this book, we have nothing to say. He is a good one to avoid when well, and to dread when ill. We also hope that he is severely an *unicum*."—*Prof. Sam. A. Jones in American Homœopathist*.

" . . . It is an extraordinary useful book, and those who add it to their library will never feel regret, for we are not saying too much in pronouncing it the *best work on therapeutics* in homœopathic (or any other) literature. With this under one elbow, and Hering's or Allen's *Materia Medica* under the other, the careful homœopathic practitioner can refute Neimayer's too confident assertion, 'I declare it idle to hope for a time when a medical prescription should be the simple resultant of known quantities.' Doctor, by all means buy Lilienthal's *Homœopathic Therapeutics*. It contains a mine of wealth."—*Prof. Chas. Gatchel in Ibid.*

LILIENTHAL, DR. S. A Treatise on Diseases of the Skin. A new edition in preparation for the press.

LUTZE, DR. A. Manual of Homœopathic Theory and Practice. designed for the use of Physicians and Families. Translated from the German, with additions by C. J. HEMPEL, M.D. From the sixtieth thousand of the German edition. 750 pages. 8vo. Half leather, \$2 50

This work, from the pen of the late Dr. Lutze, has the largest circulation of any homœopathic work in Germany, no less than sixty thousand copies having been sold. The introduction, occupying over fifty pages, contains the question of dose, and rules for examining the patient, and diet; the next sixty pages contain a condensed pathogenesis of the remedies treated of in the work; the description and treatment of diseases occupy four hundred and eighteen pages, and the whole concludes with one hundred and seventy-three pages of repertory and a copious index, thus forming a concise and complete work on theory and practice.

MALAN, H. Family Guide to the Administration of Homœopathic Remedies. 112 pages. 32mo. Cloth, 30 cts.

MANUAL OF HOMŒOPATHIC VETERINARY PRACTICE.

Designed for all kinds of Domestic Animals and Fowls, prescribing their proper treatment when injured or diseased, and their particular care and general management in health. Second and enlarged edition. 684 pages. 8vo. Half morocco, \$5 00

"In order to rightly estimate the value and comprehensiveness of this great work, the reader should compare it, as we have done, with the best of those already before the public. In size, fulness, and practical value it is head and shoulders above the very best of them, while in many most important disorders it is far superior to them altogether, containing, as it does, recent forms of disease of which they make no mention."—*Hahnemannian Monthly*.

MARSDEN, DR. J. H. Handbook of Practical Midwifery, with full instructions for the Homœopathic Treatment of the Diseases of Pregnancy, and the Accidents and Diseases incident to Labor and the Puerperal State. By J. H. MARSDEN, A.M., M.D. 315 pages. Cloth, \$2 25.

"It is seldom we have perused a textbook with such entire satisfaction as this. The author has certainly succeeded in his design of furnishing the student and young practitioner, within as narrow limits as possible, all necessary instruction in practical midwifery. The work shows on every page extended research and thorough practical knowledge. The style is clear, the array of facts unique, and the deductions judicious and practical. We are particularly pleased with his discussion of the management of labor, and the management of mother and child immediately after the birth, but much is left open to the common-sense and practical judgment of the attendant in peculiar and individual cases."—*Homœopathic Times*.

MILLARD, DR. H. B. The Climate and Statistics of Consumption. Read before the American Geographical and Statistical Society. With extensive additions by the author. 108 pages. Cloth. . 75 cts.

MOHR, DR. CHARLES. The Incompatible Remedies of the Homœopathic Materia Medica. By CHARLES MOHR, M.D., Lecturer of Homœopathic Pharmaceutics, Hahnemann Medical College, Philadelphia. (A paper read before the Homœopathic Medical Society of the County of Philadelphia) Pamphlet, in paper cover, . . 10 cts.

This is an interesting paper, which will well repay perusal and study. It gives a list of fifty-seven remedies and their incompatibles, diligently collated from the best-known sources.

MORGAN, DR. W. The Homœopathic Treatment of Indigestion, Constipation, and Hæmorrhoids. Edited with Notes and Annotations by A. E. SMALL, M.D. 166 pages 12mo. Cloth, 60 cts.

Diseases resulting from irregularity or debility of the digestive organs are so frequent in their occurrence, that scarcely a family can be found in which one or more of its members are not sufferers thereby. The present work gives in a concise manner the hygienic measures as well as the medical treatment that should be observed, calculated not only to obviate the necessity of recourse to dangerous palliatives, but to promote a complete restoration of health.

MORGAN, DR. W. The Textbook for Domestic Practice; being plain and concise directions for the Administration of Homœopathic Medicines in Simple Ailments. 191 pages. 32mo. Cloth, . 50 cts.

This is a concise and short treatise on the most common ailments, printed in convenient size for the pocket; a veritable traveller's companion.

A complete set of thirty remedies, in vials holding over fifty doses each, is furnished for \$4.50, in stout mahogany case; or same set in vials holding over one hundred doses each, for \$6.50; or book and case complete for \$5 or \$7 respectively. Address orders to Boericke & Tafel's Pharmacies, New York, Philadelphia, Baltimore, Chicago, New Orleans, or San Francisco.,.

MURE, DR. B. Materia Medica; or, Provings of the Principal Animal and Vegetable Poisons of the Brazilian Empire, and their Application in the Treatment of Diseases. Translated from the French, and arranged according to Hahnemann's Method, by C. J. HEMPEL, M.D. 220 pages. 12mo. Cloth, \$1 00

This volume, from the pen of the celebrated Dr. Mure, of Rio Janeiro, contains the pathogenesis of thirty-two remedies, a number of which have been used in general practice ever since the appearance of the work. A faithful wood-cut of the plant or animal treated of accompanies each pathogenesis.

NEIDHARD, DR. C. On the Universality of the Homœopathic Law of Cure, 30 cts.

NEW PROVINGS of Cistus Canadensis, Cobaltum, Zingiber, and Mercurius Proto-Iodatus. 96 pages. Paper, 75 cts.

NORTH AMERICAN JOURNAL OF HOMŒOPATHY. Published quarterly on the first days of August, November, February, and May. Edited by S. LILIENTHAL, M.D. Vol. X, New Series, commenced in August, 1879. Subscription price per volume, in advance, . \$4 00
Complete sets of the first twenty-seven volumes, in half morocco binding, including Index to the first eighteen volumes, . . . \$90 00
Index to the first eighteen volumes. \$2 00

OEHME, DR. F. G. Therapeutics of Diphtheritis. A Compilation and Critical Review of the German and American Homœopathic Literature. Second enlarged edition. 84 pages. Paper, 60 cts.
Same, in cloth, 75 cts.

"This pamphlet contains the best compilation of reliable testimony relative to diphtheria that has appeared from the pen of any member of our school."—*Ohio Medical and Surgical Reporter*.

"Although he claims nothing more for his book than that it is a compilation, with 'critical reviews,' he has done his work so well and thoroughly as to merit all praise."—*Hahnemannian Monthly*.

"Dr. Oehme's little book will be worth many times its price to any one who has to treat this terrible disease."—*British Journal of Homœopathy*.

"It is the best monograph we have yet seen on diphtheria."—*Cincinnati Medical Advance*

PETERS, DR. J. C. A Complete Treatise on Headaches and Diseases of the Head. I. The Nature and Treatment of Headaches. II. The Nature and Treatment of Apoplexy. III. The Nature and Treatment of Mental Derangement. IV. The Nature and Treatment of Irritation, Congestion, and Inflammation of the Brain and its Membranes. Based on Th. J. Rückert's Clinical Experiences in Homœopathy. 586 pages. Half leather, \$2 50

PETERS, DR. J. C. A Treatise on Apoplexy. With an Appendix on Softening of the Brain and Paralysis. Based on Th. J. Rückert's Clinical Experiences in Homœopathy. 164 pages. 8vo. Cloth, \$1 00

PETERS, DR. J. C. The Diseases of Females and Married Females. Second edition. Two parts in one volume. 356 pages. Cloth, \$1 50

PETERS, DR. J. C. The Diseases of Married Females. Disorders of Pregnancy, Parturition, and Lactation. 196 pages. 8vo. Cloth, \$1 00

PETERS, DR. J. C. A Treatise on the Principal Diseases of the Eyes. Based on Th. J. Rückert's Clinical Experiences in Homœopathy. 291 pages. 8vo. Cloth, \$1 50

PETERS, DR. J. C. A Treatise on the Inflammatory and Organic Diseases of the Brain. Based on Th. J. Rückert's Clinical Experiences in Homœopathy. 156 pages. 8vo. Cloth, \$1 00

PETERS, DR. J. C. A Treatise on Nervous Derangement and Mental Disorders. Based on Th. J. Rückert's Clinical Experiences in Homœopathy. 104 pages. 8vo. Cloth, \$1 00

PHYSICIAN'S VISITING LIST AND POCKET REPERTORY, THE HOMŒOPATHIC. By ROBERT FAULKNER, M.D. Second edition, \$2 00

"Dr. Faulkner's Visiting List is well adapted to render the details of daily work more perfectly recorded than any book prepared for the same purpose with which we have hitherto met. It commences with Almanacs for 1877 and 1878; then follow an obstetric calendar; a list of Poisons and their Antidotes; an account of Marshall Hall's ready method in Asphyxia; a Repertory of between sixty and seventy pages; pages marked for general memoranda; Vaccination Records; Record of Deaths; Nurses; Friends and others; Obstetric

Record, which is especially complete; and finally, pages ruled to keep notes of daily visits, and also spaces marked for name of the medicine ordered on each day. The plan devised is so simple, so efficient, and so clear, that we illustrate it on a scale just half the size of the original (here follows illustration). The list is not divided into special months, but its use may be as easily commenced in the middle of the year as at the beginning. We heartily recommend Faulkner's List to our colleagues who may be now making preparations for the duties of 1878."—*Monthly Homœopathic Review, London.*

RAUF, DR. C. G. Special Pathology and Diagnosis, with Therapeutic Hints. 344 pages. 8vo. Half morocco, . . . \$5 00

This standard work is used as a textbook in all our colleges, and is found in almost every physician's library. An especially commendable feature is that it contains the application of nearly all the *new remedies* contained in Dr. Hale's work on *Materia Medica*.

RUDDOCK, DR. Principles, Practice, and Progress of Homœopathy, 5 cts.; per hundred, \$3; per thousand, . . . \$25 00

RUOFF'S REPERTORY OF HOMŒOPATHIC MEDICINE. Nosologically arranged. Translated from the German by A. H. OKIE, M.D. With additions and improvements by G. HUMPHREY, M.D. 251 pages. 12mo. Cloth, . . . \$1 50

As a book of reference for the practitioner, the present work far excels every other work, presenting him at a single glance what he might otherwise seek for amidst a confused mass of records and never find. The indefatigable author has drawn his matter from the infallible results of experience, leaving out all guesswork and hypothesis.

RUSH, DR. JOHN. Veterinary Surgeon. The Handbook to Veterinary Homœopathy; or, the Homœopathic Treatment of Horses, Cattle, Sheep, Dogs, and Swine. From the London edition. With numerous additions from the Seventh German edition of Dr. F. E. Gunther's "Homœopathic Veterinary." Translated by J. F. SHEEK, M.D. 150 pages. 18mo. Cloth, . . . 50 cts.

SCHAEFER, J. C. New Manual of Homœopathic Veterinary Medicine. An easy and comprehensive arrangement of Diseases, adapted to the use of every owner of Domestic Animals, and especially designed for the Farmer living out of the reach of medical advice, and showing him the way of treating his sick Horses, Cattle, Sheep, Swine, and Dogs, in the most simple, expeditious, safe, and cheap manner. Translated from the German, with numerous additions from other veterinary manuals, by C. J. HEMPEL, M.D. 321 pages. 8vo. Cloth, \$2 00

SCHWABE, DR. WILLMAR. Pharmacopœia Homœopathica Polyglottica. Second edition. Cloth, . . . \$3 00

Of this valuable work, the second edition has just been issued.

SHARP'S TRACTS ON HOMŒOPATHY, each, . . . 5 cts.
Per hundred, . . . \$3 00

No. 1. What is Homœopathy?
No. 2. The Defence of Homœopathy.
No. 3. The Truth of "
No. 4. The Small Doses of "
No. 5. The Difficulties of "
No. 6. Advantages of "

No. 7. The Principles of Homœopathy.
No. 8. Controversy on "
No. 9. Remedies of "
No. 10. Provings of "
No. 11. Single Medicines of "
No. 12. Common-sense of "

SHARP'S TRACTS, complete set of 12 numbers, 50 cts.
Bound, 75 cts.

SMALL, DR. A. E. Manual of Homœopathic Practice, for the use of Families and Private Individuals. Fifteenth enlarged edition. 831 pages. 8vo. Half leather, \$2 50

SMALL, DR. A. E. Manual of Homœopathic Practice. Translated into German by C. J. HEMPEL, M.D. Eleventh edition. 643 pages. 8vo. Cloth, \$2 50

SMALL, DR. A. E. Diseases of the Nervous System, to which is added a Treatise on the Diseases of the Skin, by Dr. C. E. TOOTHACKER. 216 pages. 8vo. Cloth, \$1 00

This treatise is from the pen of the distinguished author of the well-known and highly popular work entitled, "Small's Domestic Practice." It contains an elaborate description of the diseases of the nervous system, together with a full statement of the remedies which have been used with beneficial effect in the treatment of these disorders.

STAPF, DR. E. Additions to the Materia Medica Pura. Translated by C. J. HEMPEL, M.D. 292 pages. 8vo. Cloth, \$1 50

This work is an indispensable appendix to Hahnemann's Materia Medica Pura. Every remedy is accompanied with extensive and most interesting clinical remarks, and a variety of cases illustrative of its therapeutical uses.

TESSIER, DR. J. P. Clinical Researches concerning the Homœopathic Treatment of Asiatic Cholera. Translated by C. J. HEMPEL, M.D. 109 pages. 8vo. Cloth, 75 cts.

TESSIER, DR. J. P. Clinical Remarks concerning the Homœopathic Treatment of Pneumonia, preceded by a Retrospective View of the Allopathic Materia Medica, and an Explanation of the Homœopathic Law of Cure. Translated by C. J. HEMPEL, M.D. 131 pages. 8vo. Cloth, 75 cts.

THOMAS, DR. A. R. Post-Mortem Examination and Morbid Anatomy. 337 pages. 8vo. Cloth, \$2 50

VERDI, DR. T. S. Maternity; a Popular Treatise for Young Wives and Mothers. By TULLIO SUZZARA VERDI, A.M., M.D., of Washington, D. C. 450 pages. 12mo. Cloth, \$2 00

"No one needs instruction more than a young mother, and the directions given by Dr. Verdi in this work are such as I should take great pleasure in recommending to all the young mothers, and some of the old ones, in the range of my practice."—*George E. Shipman, M.D., Chicago, Ill.*

"Dr. Verdi's book is replete with useful suggestions for wives and mothers, and his medical instructions for home use accord with the maxims of my best experience in practice."—*John F. Gray, M.D., New York City.*

VERDI, DR. T. S. Mothers and Daughters: Practical Studies for the Conservation of the Health of Girls. By TULLIO SUZZARA VERDI, A.M., M.D. 287 pages. 12mo. Cloth, \$1 50

"The people, and especially the women, need enlightening on many points connected with their physical life, and the time is fast approaching when it will no longer be thought sin-

gular or 'Yankeeish' that a woman should be instructed in regard to her sexuality, its organs and their functions. . . . Dr. Verdi is doing a good work in writing such books, and we trust he will continue in the course he has adopted of educating the mother and daughters. The book is handsomely presented. It is printed with good type on fine paper, and is neatly and substantially bound."—*Hahnemannian Monthly*.

WILLIAMSON, DR. W. Diseases of Females and Children, and their Homœopathic Treatment. Third enlarged edition. 256 pages. 12mo. Cloth, \$1 00

This work contains a short treatise on the homœopathic treatment of the diseases of females and children, the conduct to be observed during pregnancy, labor, and confinement, and directions for the management of new-born infants.

JUST PUBLISHED.

A Treatise on the Medical and Surgical Diseases of Women, with their Homœopathic Treatment. By MORTON MONROE EATON, M.D. Fully illustrated. 782 pages. Bound in sheep. Price, \$6 50

This treatise represents an immense amount of work, as it is fully brought up to date. The whole medical literature has been laid under contribution, and this, supplemented by the large experience from the author's own extensive practice, resulted in a volume of which the profession may justly feel proud. The fine illustrations are made from original drawings, and both in completeness as to the subjects treated upon as well as in the superiority of its illustrations, the work is far in advance of any similar publication of any school issued so far. The text proper takes up 782 pages, with 64 plates of illustrations, and over seventy such printed in the text. The work is divided into seventy chapters, and is very carefully indexed.

HOMŒOPATHIC JOURNALS.

THE NORTH AMERICAN JOURNAL OF HOMŒOPATHY.

SAMUEL A. LILIENTHAL, M.D., Editor. Boericke & Tafel, Publishers. Quarterly. Subscription price per year, payable in advance, \$4 00

This is the oldest Homœopathic Journal in this country, being now in its twenty-seventh year. The first volume was published in 1851, under the editorship of C. Hering, M.D., of Philadelphia; E. E. Marcy, M.D., and J. W. Metcalfe, M.D., of New York. In 1856, E. E. Marcy and J. C. Peters, M.D., of New York; Wm. H. Holcombe, M.D., of Waterproof, La., and H. C. Preston, M.D., of Providence, R. I., appear as editors. In 1860, Dr. J. C. Peters, with a corps of assistant editors, assumed charge; and from 1861 until 1869 the late Dr. F. W. Hunt virtually edited the Journal, although his name did not always appear as such. In 1870, Dr. S. Lilienthal became associated with Dr. Hunt as co-editor, and since 1871 Dr. Samuel A. Lilienthal took sole charge of the Journal.

The Journal had its ups and downs during the long years of its existence, but under the administration of indefatigable Dr. Lilienthal it entered on a career of prosperity such as it never enjoyed before, and it is safe to say that it never before had as many friends, as valuable original or translated articles, and as large a subscription list.

The Twenty-eighth Volume of this Journal commences in August, 1879. Subscriptions please address to the publication office as follows:

BOERICKE & TAFEL,
145 Grand Street, New York.

*All the Medicines mentioned in this work can be obtained in their utmost
purity and conscientiously prepared at*

BOERICKE & TAFEL'S
HOMŒOPATHIC PHARMACIES.

ESTABLISHED IN 1835.

NEW YORK, 145 Grand St.

PHILADELPHIA, 635 Arch St.

PHILADELPHIA, 125 South Eleventh St.

BALTIMORE, 135 West Fayette St.

NEW ORLEANS, 130 Canal St.

CHICAGO, 35 South Clark St.

SAN FRANCISCO, 234 Sutter St.

NOTICE TO PHYSICIANS.

Mother Tinctures. In the preparation of our Mother Tinctures, we make use of none but fresh, green plants, for the proper collection of which we have unusual facilities. Most of these are collected by ourselves within a radius of less than twenty miles from Philadelphia. Plants indigenous to the West we procure through our branch in Chicago; those of the South, through our branch in New Orleans; while plants growing on the Pacific Coast, the Sandwich Islands, etc., are furnished by our branch at San Francisco. Thus saturated tinctures made from fresh plants, gathered when in full vigor, may at all times be relied upon.

European Homœopathic Tinctures we import from the best known sources, *i. e.* from reputable Homœopathic Pharmacies.

The only exceptions to above rule are tinctures from plants growing in distant countries, as *Nux vom.*, *Rheum*, *Ignatia*, etc., which of necessity are made from carefully selected dry material.

Triturations. Our Triturations are made with *Pure Sugar of Milk* in steam triturators with the latest improvements. Having ample facilities, we are enabled to accord to each trituration fully *two hours*, whereby an unusual degree of excellence is obtained. Remedies such as *Sepia*, *Mercurius v.*, *Graphites*, are triturated four hours or longer, until the desired grade of comminution is secured.

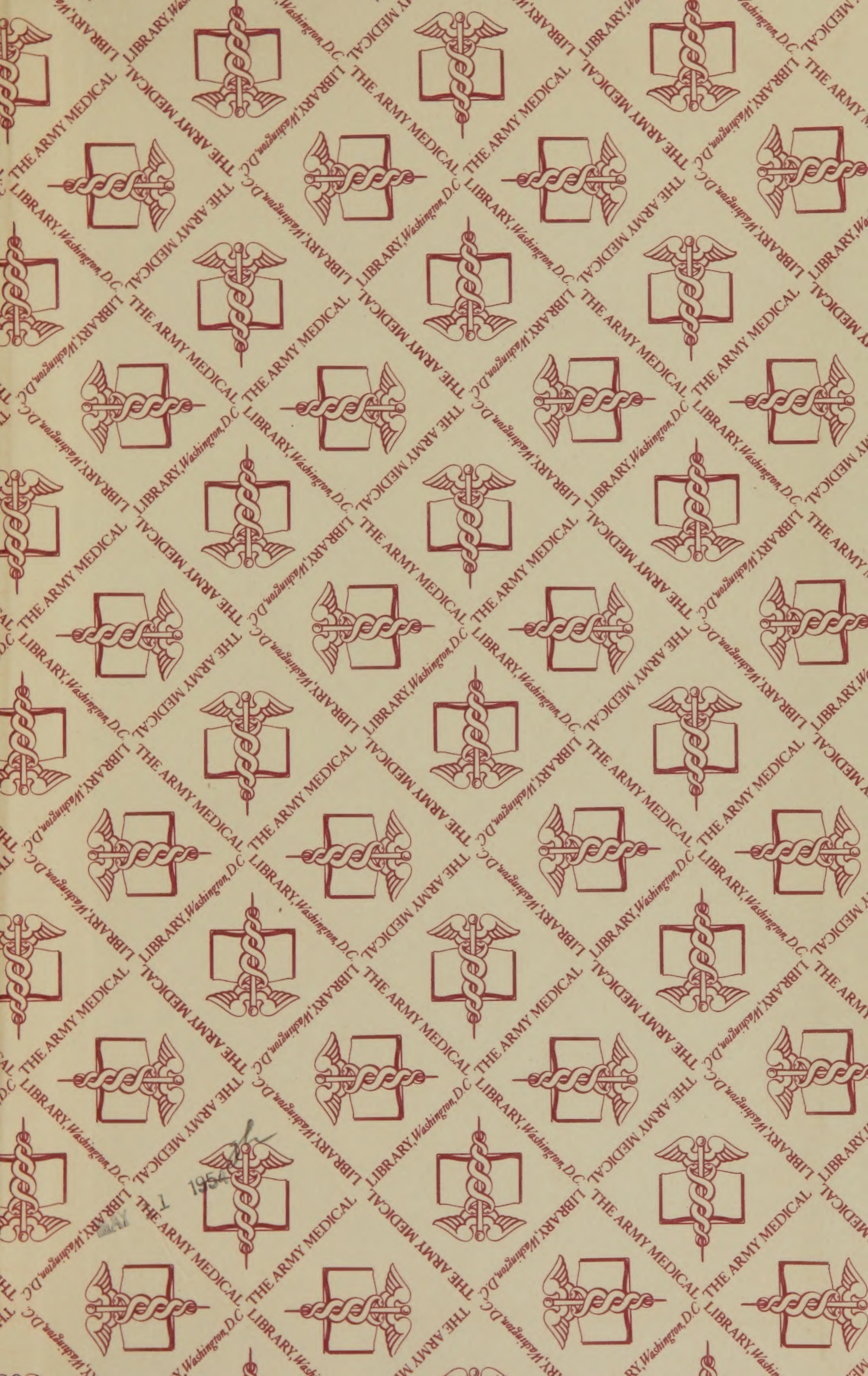
Dilutions. Our Dilutions are all conscientiously made by hand. We commenced by running up one hundred remedies to the 30th, retaining *all intermediate attenuations* and using a separate box for each remedy. Gradually the list has increased until to-day we carry in stock over *seven hundred* remedies, and are able to supply any of them like the 12th, 15th, 24th, etc., as readily as the 3d or 6th. Each of our eight pharmacies carries such a set in stock, and our patrons thus have absolute surety of obtaining any intermediate potency called for.

Our Pharmacies are devoted exclusively to the sale of Homœopathic Medicines and Books; and as all Branch Establishments are supplied from our Laboratory in Philadelphia, Medicines of our uniform standard quality, may be obtained alike from either of our several establishments.

In conclusion, we beg to assure the profession that, it has ever been our endeavor to excel in the quality of our preparations; that while furnishing our medicines at a moderate advance on cost, we do not intend to compete with establishments whose sole claims lie in cheap prices. Our endeavors have met with hearty acknowledgement by the profession, and the generous support accorded to our establishments, bears witness to our ability to give satisfaction to our many patrons.

Complete Price List and Illustrated Catalogue sent free to Physicians on application.





NATIONAL LIBRARY OF MEDICINE



NLM 00580126 0